PowerExcel Functions Manual



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POWEREXCEL FUNCTIONS MANUAL

Topics

• The PowerExcel Functions

Descriptions, Syntax and Examples

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PowerExcel Functions Manual

NOTE: Although these functions are described reaching or otherwise working with an Olation database, **they work exactly the same way with a Nexus database**, which, from a technical standpoint, is a type of Olation database.

1. OLACalculation

[Note: not available in current version.]

2. OLAConnection

Function Description: This function will allow User 1 to send a spreadsheet to another user(s) so that User 2 (User3, et. al.) can, upon opening the spreadsheet, establish a connection (as defined with this function) to the specified Olation database.

Syntax: OLAConnection (Name, URL, Database, Windows Authentication)

Name: Enter a name for a PowerExcel connection for User2—simple text entry.

URL: Enter the fully path of the URL required to reach the Olation Server where the database exists.

Database: Enter the Database name that User2 will be enabled to reach.

Windows Authentication: Enter "1" or "True" if User2 will use Windows Authentication credentials to reach the Olation database; if "2" or "False" is entered, User 2 will be required to provide Username and Password information.

Remarks:

- The Olation Web Service must be running.
- The Database must be opened and running in the specified server as identified by the URL.
- The "Windows Authentication" parameter is compulsory.

Example:

- User1 deletes the OLADatabase function in his or her PowerExcel Slice that establishes a valid connection to an Olation/PowerExcel database (in the following image, Cell B1).
- In the Excel formula bar, click on the Insert Function symbol (f_x) . The Insert Function window will appear.
- In the Or select a category drop-down, select PowerExcel.ExcelFunctions.
- Select **OLAConnection** (as shown in the following image). Click **OK**.

Power**Excel**

Aut	to Save 🤇		5.6		Book1 - Ex	cel	,∕⊂ Se	arch										Ð	- c	> x
File	Hor	me Ins	ert Pag	ge Layout	Formulas	; Data	Re	view View	Devel	oper H	elp Por	werExcel						🖻 Shar	e 🖓 Cor	mments
O New	Open		fresh Show Sideba	ar OLA Fx	ptions DRDC		dians C	ptions Clear Cache	New Cube Cube		Change So License Up Help	odates Pov	? About verExcel							~
B1		•	× ✓	<i>fx</i> =																
	A	В	с	D	E	F	G	н	1	J	К	L	м		N	0	Р	Q	R	s
1 Dat	tabase:	=																		
2 Cul	ıbe:	Sales																		
3 Dir	mensio	Filter	Sales Mea	Members	Amount										7					
4		Filter	Account	Members	All			Insert Function	Function ? X											
5		Filter	Version	Members	All			Search for a fu	n for a function:											
6		Column	Month	Range	\$B\$10:\$S\$1	.0		-	be a brief description of what you want to do and then Go											
7		Row	Region	Range	\$A\$11:\$A\$1	19		click Go	acsenption	or what you	want to do t	ind then	00							
8								Or select a <u>c</u> a	tegory: Po	werExcel.Exce	Functions	~								
9 OL	APivotT	Table						Select a functio												
10		All	January	2016	1st Quarte P	February	March	GetType	ш. 						ugust	Septembe	October	4th Quarte	Novembe	Decembe
11 All	1	129261	12468	129261	36336	13029	108	OLACalculat	on					^	12958	12014	7944	23032	7144	7944
12 Arg	gentina	6928	1434	6928	2424	540		OLAConnect OLACube	ion						1614	720	0	0	0	0
13 Wo	orld	129261	12468	129261	36336	13029	108	OLACubeDir							12958	12014	7944	23032	7144	7944
14 Soi	uth Am	24128	2934	24128	6924	2040	19	OLACubeMe OLACurrentl						~	3114	2220	1500	3700	700	1500
15 Bra	azil	17200	1500	17200	4500	1500	15	OLAConnecti		rl,database.v	vindowsAuth	entication)			1500	1500	1500	3700	700	1500
16 Car	nada	35060	3250	35060	10575	4350	25	No help avail							3350	3160	2000	6000	2000	2000
17 No	orth Am	105133	9534	105133	29412	10989	88								9844	9794	6444	19332	6444	6444
18 Me	exico	0	0	0	0	0									0	0	0	0	0	0
19 US	iΑ	70073	6284	70073	18837	6639	59								6494	6634	4444	13332	4444	4444
20								Help on this fu	nction			OK	Cance							
21																				
22																				
22																				

 Click OK. The Function Arguments window for OLAConnection appears, as shown in the following image.

Function Arguments					?	×
OLAConnection						
Name	1	Ť	=			
Url Database		1 1	=			
WindowsAuthentication		1	=			
No help available.			=			
	Name					
Formula result =						
Help on this function				ОК		Cancel

- For **Name**, you can enter any text that you deem appropriate; for **URL**, enter the full Url path to the Olation database; enter the Database that the next user(s) will be enabled to reach; lastly, enter "1" or "True" to allow the recipient user to reach the Olation database via Windows Authentication credentials.
- Upon receiving the spreadsheet with the information filled in above, User2 (User3...et. al.) will be able to open the spreadsheet and see the same PowerExcel Slice used by User1.
- With the connection established, User2 (et. al.) will be able to create new PowerExcel Slices going forward.

3. OLACube

Function Description: This function will establish connection to and return the name of the source or target Cube by taking the parameters: (a) PowerExcel/Database Connection name or the cell reference that indicates the PowerExcel/Database Connection name; and the (b) Cube name or the cell reference that indicates the Cube name you want to connect to OR the index number corresponding to the Cube you want to return.

Syntax: OLACube(Connection,Cube)

OR

OLACube(Connection,CubeIndex)

Connection: Enter the PowerExcel connection that contains the information about the Olation server URL and the source database name.

Cube: Enter the name of the source/target Cube; or enter the cell reference that contains the name of the Cube that you wish to establish connection to.

Cube Index: The index number corresponding to the Cube you want to return.

Remarks:

- The PowerExcel Connection must exist.
- The Olation Web Service must be running.
- The Database must be opened and running in the specified server.
- The 'Connection' and 'Cube' parameters are compulsory.
- Each Cube within the database is assigned an index number starting from 1, 2, 3... and so on. If there is no Cube assigned to that index number, then the function will return a #NAME? error.

It is worth noting that the **OLACube** function exists in all standard Slices. The example Slice below shows a PowerExcel Perspective Slice. When you click on the cell containing the **OLACube** formula, cell **B2**, the Excel formula bar shows the **OLACube** formula and its parameters.

By clicking in the formula bar area (as can be seen in the screenshot, the mouse cursor is placed at the end of the formula), it will show the cell references corresponding to the OLACube function; in this example, the fact data is coming from the Cube called "SALES", and it is using the PowerExcel connection/OLADatabase connection called "USING_OLATION" (\$B\$1).

A١	/ERAGE		Ŧ	: × 🗸	<i>f</i> _ =@0LA0	Cube(\$ <mark>B\$1</mark> ,"SALES	")	←					~
	A	В	С	D	E	F	G	н	1	J	К	L	E
1	Database:	USING_OLATION											
2	Cube:	"SALES")											
3	Dimensions:	Filter	SALES Measure	Members	Amount								
4		Filter	Version	Members	Variance								
5		Filter	Region		World								
6		Column	Account		\$B\$10:\$F\$10								
7		Row	Month	Range	\$A\$11:\$A\$28								
8													
9	OLAPivotTable												
10		All	Sales	Margin	Cost of Sales	Margin Pont							
11	All	50685.10857	55672	60663	-4991	1.089650093							
12	Total Quarter	50685.10857	55672	60663	-4991	1.089650093							
13	January	85431.04054	91995	98558	-6563	1.071340834							
14	1st Quarter	57846.00285	71924	86001	-14077	1.195720483							
15	February	-29822.49618	-21285	-12748	-8537	0.598919427							
16	March	2237.458495	1214	191	1023	0.157331137							
17	April	2621.829651	1700	779	921	0.458235294							
18	2nd Quarter	8251.205852	5273	2297	2976	0.435615399							
19	May	2834.656933	1788	742	1046	0.414988814							
20	June	0	1785	776	1009	0.434733894							
21	July	3006.656098	1666	326	1340	0.195678271							
22	3rd Quarter	8498.253552	3974	-549	4523	-0.138147962							
23	August	3451.883057	1391	-670	2061	-0.481667865							
24	September	2039.714397	917	-205	1122	-0.223555071							
25	October	-5696.342804	-6223	-6749	526	1.084525149							
26	4th Quarter	-23910.35369	-25499	-27086	1587	1.062237735							
27	November	-8906.880598	-9632	-10357	725	1.075269934							
28	December	-9307.130289	-9644	-9980	336	1.034840315							
29													

Cell References:

=OLACube(\$B\$1,"SALES")

- \$B\$1- the Database name or the PowerExcel connection name/cell reference that contains the name of the Database or the PowerExcel connection, i.e., USING_OLATION
- o "SALES"- the Cube in the Database

We will next provide examples that show the use of this function. The first example demonstrates use of the **OLACube** in an empty cell, i.e., outside the range of fact data returned by the cube.

Example 1: OLACube(Connection,Cube)

- Select a cell to the right of the field of data, e.g., Cell H5.
- In the Excel formula bar, click on the Insert Function symbol (f_x) . The Insert Function window will appear.
- In the Or select a category drop-down, select PowerExcel.ExcelFunctions.
- Select OLACube (as shown in the following image). Click OK.

Insert Function	?	×
Search for a function:		
Type a brief description of what you want to do and then click Go		<u>G</u> o
Or select a <u>c</u> ategory: PowerExcel.ExcelFunctions		
Select a functio <u>n</u> :		
OLACalculation OLAConnection OLACube		^
OLACubeDimension OLACubeMember OLACurrentUser OLADatabase		~
OLACube(connection,cube) No help available.		
Help on this function OK	(Cancel

- Click **OK**. The Function Arguments window for **OLACube** appears.
- For Connection, you can reference Cell **B1** from the sample Slice (or type B1); for Cube, reference Cell **B2** (or type SALES), as shown below.

Function Argu	iments	?	×
OLACube Connection Cube	SBS1 1 = "US "SALES" 1 2 3	ING_OLATION" LES"	
No help availab	= "SA Connection	LES"	
Formula result <u>Help on this fu</u>		ОК Са	ncel

The return value of the formula function is, as expected (and quite obviously) **SALES**—as indicated above; also, upon clicking OK in this window, **SALES** will show in Cell **H5**.

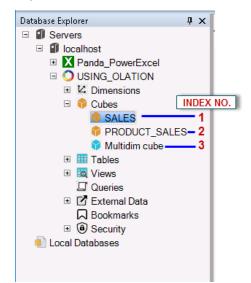
That said, the use of this function can be demonstrated by, next, **double-clicking** on Cell **H5**. Note that a dialog pops up, **Select Cube**:

H)	*	×	<i>f</i> _x =01	LACube(B1	.BZ)					
	А	В	с	D	E	F	G	Н	I	J	К
1	Database:	USING_OL	ATION PXI	-							
2	Cube:	SALES									
3	Dimensio	Filter	SALES Me	Members	Amount						
4		Filter	Version	Members	Variance						
5		Filter	Region	Members	World			SALES			
б		Column	Account	Range	\$B\$10:\$E\$	10					
7		Row	Month	Range	\$A\$11:\$A\$	27	Select Cu	ibe			×
8							Jacet Co				
9	OLAPivot1	able					Cubes				
10		Sales	Margin	Cost of Sa	Margin Pc	nt	From:	LISING O	ATION PXL		
11	Total Quai	-1240519	-1048359	-192160	0.845097		SALE				
12	January	-8131	10512	-18643	-1.29283			DUCT_SALE	Sold		
13	1st Quarte	-1243624	-1035570	-208054	0.832703						
14	February	460	187187	-186727	406.9283						
15	March	-1235953	-1233269	-2684	0.997828						
16	April	3648	1948	1700	0.533991						
17	2nd Quart	11457	6007	5450	0.524308						
18	May	3847	1977	1870	0.513907						
19	June	3962	2082	1880	0.525492						
20	July	3967	1707	2260	0.4303						
21	3rd Quarte	13615	6171	7444	0.45325			OK		Cancel	
22	August	3823	789	3034	0.206382						
23	Septembe	5825	3675	2150	0.630901						
24	October	-5038	-6038	1000	1.198491						
25	4th Quarte	-21967	-24967	3000	1.136568						
26	Novembe	-8944	-9944	1000	1.111807						
27	December	-7985	-8985	1000	1.125235						

Note here that a Select Cube dialog appears—which can be useful for many reasons, including a visual indication of what cubes are available in the PowerExcel database.

Example 2: OLACube(Connection,CubeIndex)

For this example, use the **OLACube** function to identify all the Cubes that exist within a specific Database and in what order these Cubes are arranged. The index number assigned to each Cube is based on the order they are created into the Database (i.e., the first Cube created will be assigned the index number 1, the second Cube created will be assigned the index number 2, ... and so on).



- First establish a connection to the target database: in Cell A1 type in Database connection (descriptive—i.e., non-formula-derived—cells are blue-highlighted to easily identify them), then go to cell B1 and use the OLADatabase function to establish a connection to the target database. In the example, we are using the Database connection: =@OLADatabase("USING_OLATION").
- In cells B3 to F3, type the numbers 1 to 5 (cells are highlighted in blue per above).
- Now, to use the OLACube function to determine the Cubes in the USING_OLATION database: in cell B4, type in =@OLACube(\$B\$1,1), with \$B\$1 referencing the cell containing the Database connection and 1 corresponding to the index number. Press Enter. This will return the first Cube in the Database, i.e., SALES.
 Note: You can also use the Function button found beside the formula bar to define your OLACube formula.
- Copy this formula across cells C4 to F4, but change the index numbers with 2, 3, 4... and so on. Once you hit Enter each time, you will see another Cube listed. If there are no more Cube assigned for an index number the function will return a #NAME? error. In this example (see next image), there are only 3 existing Cubes within the 'USING_OLATION' database, i.e., SALES, PRODUCT_SALES and Multidim cube, thus only indexes 1, 2 and 3 have corresponding cubes. Using index number 4 and 5 will return the #NAME? error.

A١	/erage		• :	$\times \checkmark f_x$	=@OLACuk	Cube(\$ B\$1,5)						
	А	В	с	D	Е	F	G	Н	I			
1	Database Connection	USING_OLATION										
2												
3		1	2	3	4	5						
4		SALES	PRODUCT_SALES	Multidim cube	#NAME?	\$B\$1,5)						
5												
6												
7												
8												
9												

4. OLACubeDimension

Function Description: This function returns the nth/indexed Dimension name of the specified Cube that exists within a specified PowerExcel Connection/Database Connection by taking the parameters: (a) PowerExcel/Database Connection name or the cell reference that indicates the PowerExcel/Database Connection name; and the (b) Cube name or cell reference that indicates the Cube name and (c) Dimension name or the cell reference that indicates the Dimension name you want to connect to /Index number corresponding to the Dimension you want to return.

Syntax: OLACubeDimension(Connection,Cube,Dimension)

OR

OLACubeDimension(Connection,Cube,DimensionIndex)

Connection: Enter the PowerExcel connection that contains the information about the Olation server URL and the source database name.

Cube: Enter the name of the source/target Cube; or enter the cell reference that contains the name of the source or target Cube you wish to establish connection to.

Dimension Name: Enter the Dimension name or the cell reference that contains the name of the Dimension that exists within the specified Database above.

Dimension Index: Enter the index number corresponding to the Dimension within the specified Cube that you want to return.

Remarks:

- The PowerExcel Connection must exist.
- The Olation Web Service must be running
- The Database must be opened and running in the specified server.
- The 'Connection' and 'Cube' parameters are compulsory.
- The last parameter can either be the 'Dimension name' or the 'Dimension Index' value
- Each Dimension within the Cube within the specified Database is assigned an index number starting from 1, 2, 3... and so on. If there is no Dimension assigned to that index number for the given Cube, then it will return a #NAME? error.
- The index number assigned to each Dimension is based on their order in the specified Cube.

Example 1: OLACubeDimension(Connection,Cube,Dimension)

This first example, like the one for OLACube, will show how to make the function return a selection window for any of the Dimensions in the Cube

• Using an existing Slice, select a cell to the right of the field of data, e.g., Cell H5.

- In the Excel formula bar, click on the Insert Function symbol (*f_x*). The Insert Function window will appear.
- In the Or select a category drop-down, select PowerExcel.ExcelFunctions.
- Select OLACubeDimension Click OK.
- For Connection, you can reference Cell **B1** from the sample Slice (or type B1); for Cube, reference Cell **B2** (or type SALES), and then reference a Dimension name (or type it in) as shown below.

Function Argu	uments				?	×				
OLACubeDim	ension									
Connection	B1	<u>+</u>	- "	'USING_OLATION PXL''						
Cube	B2	<u>+</u>	- "	'SALES''						
Dimension	C4	<u>1</u> =	- "	Version"						
No help availal	No help available. = "Version" Dimension									
Formula result	= Version									
Help on this fu	inction			ОК	Can	cel				

- Note that the Formula result is, as expected, "Version" (as indicated by the arrows, above)
- Click OK: the result (Version) will appear in the selected cell (e.g., H5).
- Next, double-click on that Cell. The Select Dimension window appears:

Нe	5	▼ ∃ 2	×	<i>f</i> _x =01	.ACubeDim	ension(B1	L,B2,C4)				
	А	В	С	D	E	F	G	Н	I	J	К
1	Database:	USING_OL	ATION PXL	-							
2	Cube:	SALES									
3	Dimensio	Filter	SALES Me	Members	Amount						
4		Filter	Version	Members	Variance						
5		Filter	Region	Members	World						
6		Column	Account	Range	\$B\$10;\$E\$	10		Version			
7		Row	Month	Range	\$A\$11:\$A\$	27					
8							Select	Dimension			×
9	OLAPivotT	able									
10		Sales	Margin	Cost of Sa	Margin Pcr	nt		ensions			
11	Total Quai	-1240519	-1048359	-192160	0.845097		Fn	-	OLATION P	<l< td=""><td></td></l<>	
12	January	-8131	10512	-18643	-1.29283		Cu	ibe: SALES			
13	1st Quarte	-1243624	-1035570	-208054	0.832703			ALES Measure	•		
14	February	460	187187	-186727	406.9283			ersion egion			
15	March	-1235953	-1233269	-2684	0.997828		A	ccount			
16	April	3648	1948	1700	0.533991		м	onth			
17	2nd Quart	11457	6007	5450	0.524308						
18	May	3847	1977	1870	0.513907						
19	June	3962	2082	1880	0.525492						
20	July	3967	1707	2260	0.4303						
21	3rd Quarte	13615	6171	7444	0.45325			OK		Cancel	
22	August	3823	789	3034	0.206382						.:

1

Example 2: OLACubeDimension(Connection,Cube,DimensionIndex)

For this example, use the **OLACubeDimension** function to identify all the Dimensions that exist per Cube in the *USING_OLATION* database based on their index number. (Note that DimensionIndex will be the last argument in the function.)

A sample screenshot below shows the *SALES* Cube and its component Dimensions. This screenshot indicates also how index numbers are assigned per Dimension based on how they are ordered within the Cube.

SALES	index number	nber here corresponds to the assigned to each Dimension in the SALES Cube	• X
Settings Mea	asures Dimensions	Relationships Formulas Dependenci	ies Persistent Calculations
Dimension Name	INDEX NUMBER	Туре	
SALES Measure	1	🖾 Measure	
Version	2	🗠 Standard	
Region	3	🖾 Standard	
Account	4	🗠 Standard	
Month	5	본, Standard	

- First establish a connection to the target database. In cell A1 type in Database connection (in the next image, cells that are descriptive—i.e., non-formula-derived—are blue-highlighted for easy identification), then go to cell B1: use the OLADatabase function to establish a connection to the target database. In the example, we are using the Database connection: =@OLADatabase("USING_OLATION").
- In cells **B3 to F3**, type the numbers **1 to 5** (blue-highlighted, per above). Use the OLACube function to in Cells B4 to F5 to return the Cube names. Or you can just type in the Cube name/s, making sure that they are spelled correctly.
- In cells A5 to A14 type the numbers 1 to 10 and blue-highlight them (as they are descriptive, per above).
- Use the OLACubeDimension function to return the complete list of Dimension for each Cube: Click on cell B5; then click the Function button. The Insert Function dialog appears. In the Function Category drop-down menu, select PowerExcel.ExcelFunctions then select OLACubeDimension from the Function list and click OK. The Function Arguments dialog appears. This is where you will define the formula.

BS	i		-	× v	f _x	=01	ACubeD)imension(\$B\$1	,B\$4,\$A	5)			~
	А	В	с	D		I	=	F	G	н	I.	L I	К 🔺
1	Database Connection	USING_OLATION											
2													
3		1	2	3			4	5					
4			PRODUCT_SALES	Multidin	n cube	#NA	ME?	#NAME?					
5	1	\$A5)											
6	2												
7	3												
8	4												
9	5												
10	6				Function	n Argu	ments					? ×	
11	7				OLACub	eDime	nsion						. – 1
12	8				Connec				Ť	= "USING	OLATION"		
13 14	9				-								
14	10					Cube			<u>↑</u>	= "SALES"			
16					Dimen	sion	\$A5		Ť	= 1			
17					-					= "SALES	Measure"		
18					No help a	availab	le.						
19								Connection					
20													
21													
22					Formula	result	= SALES	Measure					
23					Help on t	this fu	nction				ОК	Cancel	
24										_			
25													-

- In the Function Arguments dialog, click on the Connection field; then click on cell B1, which contains the Database connection reference. Notice that the Database connection name "USING_OLATION" appears beside the connection field.
 Note: Use an absolute reference (\$B\$1) so that the formulas can be copied across to other cells.
- Click on the Cube field, then click on cell B4, which contains the Cube reference. Note that the Cube name "SALES" appears beside the Cube field.
 Note: Use an absolute reference for this formula (B\$4).
- Click on the Dimension field then type the index number (1). Or, an easier way would be to click on A5, making the column absolute (result is **\$A5**).
- Click **OK**. The first Dimension is returned (i.e., **SALES Measure**), per the following image.

BS	5		-	$\times \checkmark f_x$	=OLACubel	Dimension(\$B\$	1,B\$4,\$A5)				~
	А	В	с	D	E	F	G	н	1	J	K 🔺
1	Database Connection	USING_OLATION									
2											
3		1	2	3	4	5					
4		SALES	PRODUCT_SALES	Multidim cube	#NAME?	#NAME?					
5	1	SALES Measure									
6	2										
7	3										
8	4										
9	5										
10	6										
11	7										
12 13	8										
	9										
14	10										
15											
16											



•

AVERAGE f_{∞} =OLACubeDimension(\$B\$1,B\$4,\$A5) Ŧ \times \checkmark A B С D Е F G Н 1 Database Connection USING_OLATION 2 3 1 2 3 4 5 SALES PRODUCT_SALES Multidim cube 4 #NAME? #NAME? 5 1 \$A5) 6 2 7 3 8 4 9 5 10 6 11 7 12 8 13 9 14 10 15

Function Argu	aments				?	×
OLACubeDim	ension					
Connection	\$B\$1	Ť	=	"USING_OLATION"		
Cube	\$B\$2	Ť	=	"SALES"		
Dimension	1	Ť	=	1		
No help availat	OLACubeDimension Connection \$B\$1 Cube \$B\$2		=	"SALES Measure"		
	Connection \$B\$1 Cube \$B\$2 Dimension 1 o help available. Connection ormula result = SALES Measure					
Formula result	= SALES Measure					
Help on this fu	inction			ок	Ca	incel

Cell References:

=OLACubeDimension(\$B\$1,B\$4,\$A5)

- \$B\$1 the Database name or the PowerExcel connection name/cell reference that contains the name of the Database or the PowerExcel connection, i.e., USING_OLATION
- o B\$4 the Cube in the Database, i.e., SALES
- \$A5 the Dimension Index number, i.e., 1
- Next, copy the formula to cells B6 to B14 then click F9 to refresh Excel. The
 OLACubeDimension function will return all the Dimensions that exist within the SALES
 Cube. If the Index value has no assigned Dimension, it will return a #NAME? error, as
 shown in the image below:

To review the cell references:

	-										
BS)		*	$\times \checkmark f_x$	=OLACubeL	Dimension(\$B\$	1,8\$4,\$A5)				~
	А	В	с	D	E	F	G	н	I	J	
1	Database Connection	USING_OLATION									
2											
3		1	2	3	4	5					
4		SALES	PRODUCT_SALES	Multidim cube	#NAME?	#NAME?					
5	1	SALES Measure									
6	2	Version									
7	3	Region									
8	4	Account									
9	5	Month									
10	6	#NAME?									
11	7	#NAME?									
12	8	#NAME?									
13	9	#NAME?									
14	10	#NAME?									
15											
16											

• Copy the formula across all other cells (**B5:F14**). Then click **Refresh**. The table is now updated.

F1	.4		• : × 🗸	<i>f</i> _≭ =OLACubeDime	nsion(\$B\$1,F\$4	4,\$A14)	`
	А	В	с	D	E	F	G
1	Database Connection	USING_OLATION					
2							
3		1	2	3	4	5	
4		SALES	PRODUCT_SALES	Multidim cube	#NAME?	#NAME?	
5	1	SALES Measure	PRODUCT_SALES Measure	Account	#VALUE!	#VALUE!	
б	2	Version	Version	Version	#VALUE!	#VALUE!	
7	3	Region	Region	Month	#VALUE!	#VALUE!	
8	4	Account	Product	Region	#VALUE!	#VALUE!	
9	5	Month	Account	Product	#VALUE!	#VALUE!	
10	6	#NAME?	Month	Multidim cube Measure	#VALUE!	#VALUE!	
11	7	#NAME?	#NAME?	#NAME?	#VALUE!	#VALUE!	
12	8	#NAME?	#NAME?	#NAME?	#VALUE!	#VALUE!	
13	9	#NAME?	#NAME?	#NAME?	#VALUE!	#VALUE!	
14	10	#NAME?	#NAME?	#NAME?	#VALUE!	#VALUE!	
15							
16							

The following image shows in the Dimensions Name column the Dimensions in the Multidim cube, which matches what is shown in Column 3 above.

Power**Excel**

	SALES 😚 PRODUCT_SALES	▼ X
INDEX	Settings Measures Dimensions	Relationships Formulas Dependencies Persistent Calculations
NO.	Dimension Name	Туре
1	PRODUCT_SALES Measure	12, Measure
2	Version	l∠, Standard
3	Region	l∠, Standard
4	Product	🗠 Standard
5	Account	IZ, Standard
6	Month	🖾 Standard

	🔗 SALES 🔞 PRODU	JCT_SALES 🖓 MI	ultidim cube			• X					
INDEX	Settings Measures	Dimensions F	Relationships	Formulas	Dependencies	Persistent Calculations					
NO.	Dimension Name		Туре)							
NO. Dimension Name Type 1 Account L' Standard 2 Version L' Standard 3 Month L' Standard 4 Region L' Standard 5 Product L' Standard											
2											
3	Month		🖾 Standard								
4	Region										
-	Product		I⊈ St	andard							
6	Multidim cube Measure		Ľм	easure							

5. OLACubeMember

Function Description: This function returns the nth/indexed Member for a specified Dimension that exists within a specified Cube. This function takes the parameters: (a)PowerExcel/Database Connection name or the cell reference that indicates the PowerExcel/Database Connection name; and the (b)Cube name or cell reference that indicates the Cube name; (c)Dimension name or the cell reference that indicates the Dimension name; and the (d)Member name or the cell reference that indicates the Member you want to connect to /Index number corresponding to the Member you want to return.

Syntax: OLACubeMember(Connection,Cube,Dimension,Member)

OR

OLACubeMemberIndex(Connection,Cube,Dimension,MemberIndex)

Connection: Enter the PowerExcel connection which contains the information about the Olation server URL and the source database name.

Cube: Enter the name of the source/target Cube; or enter the cell reference that contains the name of the source or target Cube you wish to establish connection to.

Dimension Name: Enter the Dimension name or the cell reference that contains the name of the Dimension that exists within the specified Database above.

Member Name: Enter the Member name or the cell reference that contains the name of the Member that exists within the specified Dimension.

Member Index: Enter the index number corresponding to the Member within the specified Dimension that you want to return.

Remarks:

- The PowerExcel Connection must exist.
- The Olation Web Service must be running
- The Database must be opened and running in the specified server.
- The 'Connection', 'Cube' and 'Dimension' parameters are compulsory
- The last parameter can either be the 'Member name' or the 'Member Index' value
- All Members within the Dimension are each assigned an index number starting from 1, 2, 3... and so on. If there is no Member assigned to that index number for the given Dimension, then it will return a #NAME? error.
- The index number assigned to each Member is based on the order they are arranged in the specified Dimension.

Example 1: OLACubeMember (Connection, Cube, Dimension, Member)

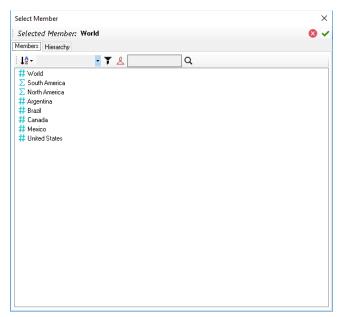
This first example, like the ones for OLACube and OLACubeDimension, will show how to make the function return a selection window for any Member of a Dimension in the Cube.



- Using an existing Slice, select a cell to the right of the field of data, e.g., Cell H5.
- In the Excel formula bar, click on the Insert Function symbol (*f_x*). The Insert Function window will appear.
- In the Or select a category drop-down, select PowerExcel.ExcelFunctions.
- Select OLACubeMember. Click OK.
- For Connection, you can reference Cell B1 from the sample Slice (or type B1); for Cube, reference Cell B2 (or type SALES); next, reference a selected Dimension (e.g., *Region*) and then reference a Member name (or type it in) as shown below. Note that if you reference a cell with a Member in it from the Filter area, a unique string will appear, as in the final argument below, which provides the result "World".

Function Argu	uments				?	×
OLACubeMen	Connection B1 Cube B2 Dimension C5 Member 1326a56baO66cdbb8871 o help available.					
Connection	B1	1	=	"USING_OLATION PXL"		
Cube	B2	1	=	"SALES"		
Dimension	C5	1	=	"Region"		
Member	1326a56ba066cdbb8871	Ť	=	"World"		
No help availal	LACubeMember connection B1 Cube B2 Dimension C5 Member 1326a56baO66cdbb8871 help available. Member rmula result = World		=	"World"		
Formula result	OLACubeMember Connection B1 Cube B2 Dimension C5 Member 1326a56baO66cdbb8871 o help available. Member ormula result = World					
Help on this fu	Cube B2 Dimension C5 Member 1326a56ba066cdbb8871 Io help available. Io help available.			ОК	Car	icel

- Click **OK**: the result (World) will appear in the selected cell (e.g., H5).
- Next, **double-click** on that Cell. The Select Member window appears—note that it has two tabs (shown in two successive images below): one (Members) for selection of Members from a list, and another (Hierarchy) that shows the Members as they appear in a hierarchy within the Dimension:



Select Member	X
Selected Member: World	8 🗸
Members Hierarchy	
↑ Find: Q 53 ¥	
ie# World ieΣ South America	
⊨# Brazil ⊟∑ North America	
# Mexico # United States	
T	

Example 2: OLACubeMember (Connection,Cube,Dimension,MemberIndex)

For this example, we will use the **OLACubeMember** function to identify and make a list of all the Members that exist for a component Dimension of a specific Cube and bring them down to Excel—all based on their index numbers. For this example, *USING_OLATION* is the source database and the focus is on the *SALES* Cube. Our focus will be on the *Months* Dimension.

A sample screenshot below shows the *SALES* Cube and its component Dimensions. This screenshot indicates also how index numbers are assigned per Dimension based on how they are ordered within the Cube.

↓ <mark>2</mark> -	a Select Member	Version]	× 8 •			
Amount	i Selected Her Members Hiera i 12 - # Variance # Actual # Budget	: 1 Select Member Selected Member Members Hierarch	Region Select Member Select Member: Selected Member: Image: Hierarchy Image: Hierarchy		×	× •	8

A screenshot of the list of Members for each component Dimension of the SALES Cube

Power**Excel**

- First we will establish a connection to the target database. In cell A1 type in Database connection (cells that are descriptive—i.e., non-formula-derived—are blue-highlighted for easy identification), then in cell B1, use the OLADatabase function to establish a connection to the target database, in the example, we are using the Database connection:
 =@OLADatabase("USING_OLATION").
- In cell A2 type the caption Cube (again highlight this in blue since this is just a caption) then go to cell B2 then and use the OLACube function to return the source Cube (SALES). In the example, we defined the formula as: =@OLACube(\$B\$1,"SALES").
- In cells B5 to F5, use the OLACubeDimension function to pull in the Dimensions that exist for the SALES Cube. In the example, we defined the formula in cell B5 as:
 =OLACubeDimension(\$B\$1,\$B\$2,1).

Copy the formula to cells C5 to F5 and just change the last parameter (index value) with 2, 3... and so on.

• In cells **A9 to A28**, type the Member Index value 1 to 20. You can also add captions as in the following image.

B8	2			$\times \checkmark f_x$					
		В	С	D	E	F	G	н	I
	Database Connection								
	Cube	SALES							
3									
4				Dimensions					
5		SALES Measure	Version	Region	Account	Month			
6									
7			1	Members					
	MemberIndex	,							
9 10	1								
11	3								
12	. 4								
13	5								
14	6								
15	7								
16	8								
17	9								
18	10								
19	11								
20	12								
21	13								
22	14								
23	15								
24	16								
25	17								
26	18								
27	20								
28									
29									
30									
31									

 Now, we are going to use the OLACubeMember function to create a list of Members for each Dimension that exist for the SALES Cube within the USING_OLATION database. Go to cell B9 then click next to the Function button located beside the formula bar. The Insert Function dialog box appears.

- In the category list, select PowerExcel.ExcelFunctions, click OLACubeMember and click OK. The Function Arguments dialog box appears. This is where you will define the OLACubeMember formula.
- In the Function Arguments dialog, click on the Connection field, then click on cell B1 which contains the Database connection reference. Notice that the Database connection name "USING_OLATION" appears beside the connection field.
 Note: Use the absolute reference to easily copy the formulas across the other cells. We used absolute reference along rows and columns (result is \$B\$1)
- Click on the Cube field,m then click on the cell B2 which is the cell that contains the Cube reference. Again, notice that the Cube name "SALES" appears beside the Cube field.
 Note: Again, use absolute reference for this formula. We used absolute reference along the rows and columns (result is \$B\$2).
- Click on the **Dimension** field then click on cell **B5** which is the cells that contains the Dimension reference. Again, notice that the Dimension name "SALES Measure" appears beside the Dimension field.
 Note: You can again use absolute reference for this formula. Let us use absolute reference along the rows (result is **B\$5**)
- Lastly, click on the Member field then click on cell A9 which will dictate the index value for our last parameter. Again, we will use the absolute reference along the columns (result is \$A9).

Α	9		-	$\times \checkmark f_x$	=OLACube	Member(\$B\$1,\$	B\$2,B\$5,\$/	\9)			
	A	В	с	D	E	F	G	н	1	J	к
1	Database Connection	USING_OLATION									
2	Cube	SALES									
3											
4				Dimensions							
5		SALES Measure	Version	Region	Account	Month					
б											
7				Members							
8	MemberIndex										
9	1	\$5,\$A9)									
10	2										
11	3										
12	4										
13	5										
14	6										
15	7			Function Arg	uments				?	×	
16	8			-					•	~	
17	9	· · · · · · · · · · · · · · · · · · ·		OLACubeMer	mber						
18	10			Connection	\$B\$1	:	🗈 = "USII	NG_OLATION"			
19	11			Cube	\$B\$2	:	🗈 = "SAL	ES"			
20	12			Dimension	B\$5		± = "SAL	ES Measure"			
21	13			Member	-	land the second s	t = 1				
22	14			member	1004						
23	15			No help availa	h l a		-				
24	16			NO NEIP avalla							
25	17					Member					
26	18										
27	20										
28				Formula result	t =						
29				Help on this fu	unction			OK	Car	ncel	
30											
31											
32											

• The Function Arguments dialog will look as follows:

• Click **OK**. This will return the Member **Amount**. Let us take a look at the cell references:

Power**Excel**

	/ERAGE		· .	× √ f _x	outout	eMember(\$B\$1,	indo nór é	الام	
LA'	VERAGE		· ·	∧ ♥ Jx	=OLACUD	ewember(\$8\$1,\$	9892,890,9/	49)	
	А	В	с	D	E	F	G	н	1
1	Database Connection	USING_OLATION	l l						
2	Cube	SALES							
З									
4				Dimensions					
5		SALES Measure	Version	Region	Account	Month			
6									
7				Members					
8	MemberIndex								
9	1	B\$5,\$A9)							
10	2								
11	3								
12	4								
13	5								
14	6								
15	7								
16	8								
17	9								
18	10								
20	11								
20	12								
22	13								
23	14								
24	16								
25	17								
26	18								
27	20								
28									

Function Arqu	iments				?	Х
r ancaon Aiga	ineno				•	~
COLACubeMem	nber					
Connection	\$B\$1	Ť	=	"USING_OLATION"		
Cube	\$B\$2	1	=	"SALES"		
Dimension	B\$5	1	=	"SALES Measure"		
Member	\$A9	Ţ	=	1		
			=	"Amount"		
No help availat	ole.					
	Connection					
Formula result	= Amount					
<u>Help on this fu</u>	nction			ОК	Ca	incel

Cell References:

=OLACubeMember(**\$B\$1**,**\$B\$2**,B\$5,**\$**A9)

- \$B\$1- the Database name or the PowerExcel connection name/cell reference that contains the name of the Database or the PowerExcel connection, i.e., USING_OLATION
- \$B\$2- the Cube in the Database, i.e., SALES
- o B\$5- the Dimension in the SALES Cube, i.e., SALES Measure
- \$A9- the Member Index number or cell reference, i.e., 1

F2	7		•	$\times \checkmark f_x$	=OLACube	Member(\$B\$1,\$	B\$2,F\$5,\$4	427)	
	А	В	с	D	E	F	G	н	I.
1	Database Connection	USING_OLATION							
2	Cube	SALES							
3									
4				Dimensions					
5		SALES Measure	Version	Region	Account	Month			
б									
7				Members					
8	MemberIndex								
9	1	Amount	Variance	World	All	All			
10	2	#NAME?	Actual	South America	Margin	Total Quarter			
11	3	#NAME?	Budget	North America	Sales	January			
12	4	#NAME?	#NAME?	Argentina	Cost of Sales	February			
13	5	#NAME?	#NAME?	Brazil	Margin Pcnt	March			
14	6	#NAME?	#NAME?	Canada	#NAME?	April			
15	7	#NAME?	#NAME?	Mexico	#NAME?	May			
16	8	#NAME?	#NAME?	United States	#NAME?	June			
17	9	#NAME?	#NAME?	#NAME?	#NAME?	July			
18	10	#NAME?	#NAME?	#NAME?	#NAME?	August			
19	11	#NAME?	#NAME?	#NAME?	#NAME?	September			
20	12	#NAME?	#NAME?	#NAME?	#NAME?	October			
21	13	#NAME?	#NAME?	#NAME?	#NAME?	November			
22	14	#NAME?	#NAME?	#NAME?	#NAME?	December			
23	15	#NAME?	#NAME?	#NAME?	#NAME?	1st Quarter			
24	16		#NAME?	#NAME?	#NAME?	2nd Quarter			
25	17	#NAME?	#NAME?	#NAME?	#NAME?	3rd Quarter			
26	18		#NAME?	#NAME?	#NAME?	4th Quarter			
27	20	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?			
28									
29									
30									

• Now, copy this formula across the range **B9:F27**.

• Press **F9** or refresh the Excel worksheet. You will see that it now returns a full list of the Members per Dimension that exist on the USING_OLATION database.

6. OLACurrentUser

Function Description: This function will return the name of the current user logged into the machine and accessing the PowerExcel application, taking the PowerExcel/Database Connection name or the cell reference that indicates the PowerExcel/Database Connection name as the only parameter.

Syntax: OLACurrentUser(Connection)

Connection: Enter the PowerExcel connection that contains the information about the Olation server URL and the source database name.

Remarks:

- The PowerExcel Connection must exist.
- The Olation Web Service must be running.
- The Database must be opened and running in the specified server.
- The 'Connection' parameter is compulsory.

Example:

For this example, we will use the **OLACurrentUser** function to return the name of the user account currently logged on the machine where the PowerExcel Slice, e.g., *SALES Report*, is currently opened. Looking at the screenshot below, the active cell is cell **G3**, which contains the **OLACurrentUser** function: it returns the current user named **Demo**.

,	AutoSave 💽 Off	8 9. 6.	⊽ Book1	- Excel	Q		a –		×
Fi	ile Home	Insert Page Layo	out Formulas	Data Review	View Developer	Help	PowerExcel	Ŕ	2
Gŝ	3		*	: × v	<i>f</i> _* =OLACurrer	ntUser(\$B	\$1)		^
	А	В	с	D	E	F	G	н	-
1	Database:	USING_OLATION							
2	Cube:	SALES					User Logged On		
3	Dimensions:	Filter	SALES Measure	Members	Amount		Demo		
4		Filter	Version	Members	Variance				
5		Filter	Region	Members	World				
6		Column	Account	Range	\$B\$10:\$E\$10				
7		Row	Month	Range	\$A\$11:\$A\$27				
8									
9	OLAPivotTable								
10		Sales	Margin	Cost of Sales	Margin Pcnt				
	April	2,885.00	1,685.00	1,200.00	0.58				
12	2016	95,446.00	102,324.00	(6,878.00)	1.07				
13	2nd Quarter	10,281.00	6,721.00	3,560.00	0.65				
14	August	5,201.00	3,901.00	1,300.00	0.75				
15	3rd Quarter	15,640.00	11,460.00	4,180.00	0.73				

• By clicking in the formula bar area (as can be seen in the following screenshot, the mouse cursor is placed at the end of the formula), it will show the cell references corresponding

to the **OLACurrentUser** function. Since this **OLACurrentUser** function only requires one parameter, the formula only shows the Connection parameter called "USING_OLATION"(**\$B\$1**).

A	/ERAGE		Ŧ	: × ✓	<i>f</i> ∗ =OLACurrer	ntUser(\$B	\$1)	-
	А	в	С	D	E	F	G	н
1	Database:	USING_OLATION	l					
2	Cube:	SALES					User Logged On	
3	Dimensions:	Filter	SALES Measure	Members	Amount		(\$B\$1)	
4		Filter	Version	Members	Variance			
5		Filter	Region	Members	World			
6		Column	Account	Range	\$B\$10:\$E\$10		This cell G3 is wh	ere
7		Row	Month	Range	\$A\$11:\$A\$27		the OLACurrentU	
8							function will retu	
9	OLAPivotTable						the result / valu	e
10		Sales	Margin	Cost of Sales	Margin Pcnt			
11	April	2,885.00	1,685.00	1,200.00	0.58			

Cell References:

=OLACurrentUser(\$B\$1)

• \$B\$1- the Database name or the PowerExcel connection name/cell reference that contains the name of the Database or the PowerExcel connection, i.e., USING_OLATION

Function Argument	S			? X
OLACurrentUser Connection \$B\$1		<u>+</u> =	"USING_OLATION"	
No help available.		=	"Demo"	
	Connection			
Formula result = De	mo			
Help on this function	1		ОК	Cancel

As previously mentioned, the return value of the formula for this example is the **Demo** user.

7. OLADatabase

Function Description: Establishes a connection to the source/target database via identifying the correct PowerExcel Connection that contains the necessary connection information of the source <Olation> Server and database.

Syntax: OLADatabase(Connection)

Connection: Enter the PowerExcel connection that contains the information about the Olation server URL and the source database name.

Remarks:

- The PowerExcel Connection must exist.
- The Olation Web Service must be running.
- The Database must be opened and running in the specified server.
- The 'Connection' parameter is compulsory.

Example:

The example Slice below shows a PowerExcel Perspective Slice with the **PowerExcel Connection/OLADatabase** named **"USING_OLATION**" located on cell B1.

A١	/ERAGE		-	: × ✓	<i>f</i> * =@0lAI	Database ("USING_	OLATION	ଆ <	-					*
	А	В	с	D	E	F	G	н		J	к	L		
1	Database:	"USING_OLATION")												
2	Cube:	SALES												
3	Dimensions:	Filter	SALES Measure	Members	Amount									
4		Filter	Version	Members	Variance									
5		Filter	Region	Members	World									
б		Column	Account	Range	\$B\$10:\$F\$10									
7		Row	Month	Range	\$A\$11:\$A\$28									
8														
9	OLAPivotTable													
10		All	Sales	Margin	Cost of Sales	Margin Pcnt								
11	All	50685.10857	55672	60663	-4991	1.089650093								
12	Total Quarter	50685.10857		60663		1.089650093								
13	January	85431.04054		98558	-6563	1.071340834								
	1st Quarter	57846.00285	71924	86001	-14077									
	February	-29822.49618	-21285	-12748										
	March	2237.458495		191		0.157331137								
	April	2621.829651	1700	779		0.458235294								
18	2nd Quarter	8251.205852	5273	2297		0.435615399								
	May	2834.656933	1788	742										
	June	0		776		0.434733894								
	July	3006.656098	1666	326										
	3rd Quarter	8498.253552	3974	-549										
	August	3451.883057		-670		-0.481667865								
	September	2039.714397		-205										
	October	-5696.342804		-6749										1
	4th Quarter	-23910.35369	-25499	-27086									_	
	November	-8906.880598	-9632	-10357										
	December	-9307.130289	-9644	-9980	336	1.034840315								
29														-

Function Arguments	?	×
OLADatabase Connection "USING_OLATION" = "USING_OLATION"	ON"	
= "USING_OLATI No help available.	ON"	
Connection		
Formula result = USING_OLATION		
Help on this function OK	<	Cancel

Cell References:

=@OLADatabase("USING_OLATION")	
	_

• "USING_OLATION" – this is the name of the PowerExcel connection or the Database name that we want to establish connection to.

8. OLADimension

Function Description: This function returns the specified Dimension or the Dimension name that corresponds to a specified Dimension Index number that exists in a specified PowerExcel/Database Connection.

Syntax: OLADimension(Connection, Dimension)

OR

OLADimension(Connection, DimensionIndex)

Connection: Enter the PowerExcel connection that contains the information about the Olation server URL and the source database name.

Dimension: Enter the name of the Dimension or the cell reference that contains the name of the Dimension you wish to return.

Dimension Index: The index number corresponding to the Dimension you want to return.

Remarks:

- The PowerExcel Connection must exist.
- The Olation Web Service must be running.
- The Database must be opened and running in the specified server.
- The 'Connection' parameter is compulsory.
- Each Dimension in the database is assigned an index number starting from 1, 2, 3... and so on. If there is no Dimension assigned to that index number, then it will return a #NAME? error.
- The index number assigned to the Dimension is based on the order they are created within the specified database.

Example 1: OLADimension(Connection, Dimension)

This first example, like the ones for OLACube and OLACubeDimension and OLACubeMember, will show how to make the function return a selection window for <u>all</u> <u>Dimensions in the Database</u>. (This is in contrast to OLACubeDimension, which concerns accessing the Dimensions in a selected Cube.)

- Using an existing Slice, select a cell to the right of the field of data, e.g., Cell H5.
- In the Excel formula bar, click on the Insert Function symbol (f_x) . The Insert Function window will appear.
- In the Or select a category drop-down, select PowerExcel.ExcelFunctions.
- Select OLADimension. Click OK.

• For Connection, you can reference Cell **B1** from the sample Slice (or type B1); next, reference a selected Dimension (e.g., *Version*).

Function Argu	ments			?	\times
OLADimension					
Connection	B1	<u>+</u> =	"USING_OLATION PXL"		
Dimension	C4	<u>+</u> =	"Version"		
No help availabl	e. Connection	_	"Version"		
Formula result =	Version				
Help on this fund	tion		ОК	Cano	cel

- Click **OK**: the result ("Version") will appear in the selected cell (e.g., H5).
- Next, double-click on that Cell. The Select Dimension window appears showing <u>all</u> <u>Dimensions from the Database</u> (i.e., not limited to any specified Cube), as shown below.

Select Dimension $\qquad imes$
Dimensions From: USING_OLATION PXL Account Version Month Region Product SALES Measure PRODUCT_SALES Measure
OK Cancel

Example 2: OLADimension(Connection, DimensionIndex)

For example, we have a sample PowerExcel Slice and want to see a <u>complete list of the</u> <u>Dimensions</u> that exist in our source database and return those Dimensions in Excel.

Power**Excel**

Н	1			• E 🗡	√ f _x D	imension List				
2	А	В	с	D	E	F	G	Н	I	
1	Database:	USING_OLATION						Dimension List		
2	Cube:	SALES								
3	Dimensions:	Filter	SALES Measure	Members	Amount					
4		Filter	Version	Members	Variance					
5		Filter	Region	Members	World					
б		Column	Account	Range	\$B\$10:\$F\$10					
7		Row	Month	Range	\$A\$11:\$A\$28					
8										
9	OLAPivotTable									
10		All	Sales	Margin	Cost of Sales	Margin Pcnt				
11	All	50685.10857	55672	60663	-4991	1.089650093				
12	Total Quarter	50685.10857	55672	60663	-4991	1.089650093				
13	January	85431.04054	91995	98558	-6563	1.071340834				
14	1st Quarter	57846.00285	71924	86001	-14077	1.195720483				
15	February	-29822.49618	-21285	-12748	-8537	0.598919427				
16	March	2237.458495	1214	191	1023	0.157331137				
17	April	2621.829651	1700	779	921	0.458235294				
18	2nd Quarter	8251.205852	5273	2297	2976	0.435615399				
19	May	2834.656933	1788	742	1046	0.414988814				
20	June	2794.719269	1785	776	1009	0.434733894				
21	July	3006.656098	1666	326	1340	0.195678271				
22	3rd Quarter	8498.253552	3974	-549	4523	-0.138147962				
23	August	3451.883057	1391	-670	2061	-0.481667865				
24	September	2039.714397	917	-205	1122	-0.223555071				
25	October	-5696.342804	-6223	-6749	526	1.084525149				
26	4th Quarter	-23910.35369	-25499	-27086	1587	1.062237735				
27	November	-8906.880598	-9632	-10357	725	1.075269934				
28	December	-9307.130289	-9644	-9980	336	1.034840315				
29										
30										

- With an example Slice already created (as in the above image), in Cell **H1** (or any empty cell), type the caption '**Dimension List**'.
- Now, to use the OLADimension function to list all Dimensions that exist within the database (USING_OLATION, in the example): In Cell H2 click the Function button located beside the formula bar. The Insert Function dialog box appears.
- In the Insert Function dialog box, select **PowerExcel.ExcelFunctions** as the category, then select **OLADimension** as the function. The Function Arguments dialog box appears.
- In the Function Arguments dialog, click in the Connection field, then click on Cell B1, which contains the Database connection reference. Notice that the Database connection name "USING_OLATION" appears beside the connection field.
 Note: You can use the absolute reference to easily copy the formulas across to other: \$B\$1.

H2	1			• : ×	✓ <i>f</i> _x =	OLADimension(\$	B\$1,1)					
	А	В	С	D	E	F	G	Н	1			
1	Database:	USING_OLATION						Dimension List				
2	Cube:	SALES						=OLADimension(\$B\$1,1)				
З	Dimensions:	Filter	SALES Measure	Members	Amount							
4		Filter	Version	Members	Variance							
5		Filter	Region	Members	World							
б		Column	Account	Range	\$B\$10:\$F\$10							
7		Row	Month	Range	\$A\$11:\$A\$28							
8												
9	OLAPivotTable											
10		All	Sales	Margin	Cost of Sales	Margin Pcnt						
11	All	50685.10857	55672	60663	-4991	1.089650093						
12	Total Quarter	50685.10857	55672	60663	-4991	1.089650093						
13	January	85431.04054	91995	98558	-6563	1.071340834						
14	1st Quarter	57846.00285	71924	86001	1/077	1 195720/83						
15	February	-29822.49618	-21285	-12748	Function Arg	uments			? ×			
16	March	2237.458495	1214	191	OLADimensio	n						
17	April	2621.829651	1700	779	Connection			★ = "USING_OLATION"				
18	2nd Quarter	8251.205852	5273	2297								
19	May	2834.656933	1788	742	Dimension	1		<u>↑</u> = 1				
20	June	2794.719269	1785	776				= "Account"				
21	July	3006.656098	1666	326	No help availa	ble.						
22	3rd Quarter	8498.253552	3974	-549		Dimen	sion					
23	August	3451.883057	1391	-670								
24	September	2039.714397	917	-205								
25	October	-5696.342804	-6223	-6749	Formula result	= Account						
26	4th Quarter	-23910.35369	-25499	-27086								
27	November	-8906.880598	-9632	-10357	Help on this fu	Help on this function OK Cancel						
28	December	-9307.130289	-9644	-9980	336	1.034840315						
29												
30												

- In the **Dimension** field, type the index number: **1** then click **OK**.
- Back in the Excel worksheet in cell **H2**, the *Account* dimension appears (as in the image below).

H:	H2 • : × ✓ fx =OLADimension(\$B\$1,1)								
	А	В	С	D	E	F	G	Н	1
1	Database:	USING_OLATION						Dimension List	
2	Cube:	SALES						Account	
З	Dimensions:	Filter	SALES Measure	Members	Amount				
4		Filter	Version	Members	Variance				
5		Filter	Region	Members	World				
6		Column	Account	Range	\$B\$10:\$F\$10				
7		Row	Month	Range	\$A\$11:\$A\$28				
8									
9	OLAPivotTable								
10		All	Sales	Margin	Cost of Sales	Margin Pcnt			
11	All	50685.10857	55672	60663	-4991	1.089650093			
12	Total Quarter	50685.10857	55672	60663	-4991	1.089650093			
13	January	85431.04054	91995	98558	-6563	1.071340834			

• **Copy the formula down column H** and just change the last parameter, which is the Dimension Index value with **2**, **3**, **4** and so on. The function will start to return #NAME? error when there are no more Dimension corresponding to an index number, meaning you reached the end of the Dimension list.

Power**Excel**

AVERAGE T : X V fx =OLADimension(\$B\$1,13)									
4	А	В	С	D	E	F	G	н	I
1	Database:	USING_OLATION						Dimension List	
2	Cube:	SALES						Account	
3	Dimensions:	Filter	SALES Measure	Members	Amount			Version	
4		Filter	Version	Members	Variance			Month	
5		Filter	Region	Members	World			Region	
6		Column	Account	Range	\$B\$10:\$F\$10			Product	
7		Row	Month	Range	\$A\$11:\$A\$28			PRODUCT Test	
8								SALES Measure	
9	OLAPivotTable							PRODUCT_SALES Measure	
10		All	Sales	Margin	Cost of Sales	Margin Pcnt		Multidim cube Measure	
11	All	50685.10857	55672	60663	-4991	1.089650093		#NAME?	
12	Total Quarter	50685.10857	55672	60663	-4991	1.089650093		#NAME?	
13	January	85431.04054	91995	98558	-6563	1.071340834		#NAME?	
14	1st Quarter	57846.00285	71924	86001	-14077	1.195720483		=OLADimension(\$B\$1,13)	
15	February	-29822.49618	-21285	-12748	-8537	0.598919427			Ī
16	March	2237.458495	1214	191	1023	0.157331137			
17	April	2621.829651	1700	779	921	0.458235294			
18	2nd Quarter	8251.205852	5273	2297	2976	0.435615399			
19	May	2834.656933	1788	742	1046	0.414988814			
20	June	2794.719269	1785	776	1009	0.434733894			
21	July	3006.656098	1666	326	1340	0.195678271			
22	3rd Quarter	8498.253552	3974	-549	4523	-0.138147962			
23	August	3451.883057	1391	-670	2061	-0.481667865			
24	September	2039.714397	917	-205	1122	-0.223555071			
25	October	-5696.342804	-6223	-6749	526	1.084525149			
26	4th Quarter	-23910.35369	-25499	-27086	1587	1.062237735			
27	November	-8906.880598	-9632	-10357	725	1.075269934			
28	December	-9307.130289	-9644	-9980	336	1.034840315			
29									
30									

• In the above example there are 9 existing Dimensions within the USING_OLATION database. If you click on any cell containing the OLADimension formula (as in the image above) then click on the Formula bar, you will see the cell/index references:

Function Argu	?	×								
OLADimension										
Connection	\$B\$1	<u>+</u> =	"USING_OLATION"							
Dimension	1	<u>+</u> =	1							
No help availal	ole. Connection	=	"Account"							
Formula result = Account										
Help on this fu	inction		ОК	Car	ncel					

Cell References:

```
=OLADimension ($B$1,1)
```

- \$B\$1- the Database name or the PowerExcel connection name/cell reference that contains the name of the Database or the PowerExcel connection, i.e., USING_OLATION
- 1 –the Dimension Index number; the corresponding Member to this index value in this case is Account
- If you double-click on the cell that contains the OLADimension formula (as in the image below), the Select Dimension dialog will appear—this also shows a list all existing Dimensions within the source database.

Н	3			• : ×	√ f _x =	DLADimensio	n(\$B\$1,2)		
	А	В	С	D	E	F	G	Н	I
1	Database:	USING_OLATION						Dimension List	
2	Cube:	SALES						Account	
3	Dimensions:	Filter	SALES Measure	Members	Amount			Version	
4		Filter	Version	Members	Variance			Month	
5		Filter	Region	Members	World			Region	
б		Column	Account	Select Dimen:	sion		×	Product	
7		Row	Month	F				PRODUCT Test	
8				Dimensions				SALES Measure	
9	OLAPivotTable			From: U	SING_OLATION			PRODUCT_SALES Measure	
10		All	Sales	Account				Multidim cube Measure	
11	All	50685.10857	55672	Version				#NAME?	
12	Total Quarter	50685.10857	55672	Month Region				#NAME?	
13	January	85431.04054	91995	Product				#NAME?	
14	1st Quarter	57846.00285	71924	PRODUC SALES M	easure			#NAME?	
15	February	-29822.49618	-21285		T_SALES Measure ube Measure				
16	March	2237.458495	1214	Multialm C	ube measure				
17	April	2621.829651	1700						
18	2nd Quarter	8251.205852	5273						
19	May	2834.656933	1788						
20	June	2794.719269	1785		ЭК	Cancel			
21	July	3006.656098	1666	326	5 1340	0.19567827	1		
22	3rd Quarter	8498.253552	3974	-549	9 4523	-0.13814796	2		
23	August	3451.883057	1391	-670	2061	-0.48166786	5		
24	September	2039.714397	917	-205	5 1122	-0.22355507	1		
25	October	-5696.342804	-6223	-6749	526	1.08452514	Э		
26	4th Quarter	-23910.35369	-25499	-27086	5 1587	1.06223773	5		
27	November	-8906.880598	-9632	-10357	7 725	1.07526993	4		
28	December	-9307.130289	-9644	-9980	336	1.03484031	5		
29									
30									

9. OLAMember

Function Description: This function returns the specified Member within the specified Dimension that exists in a specified PowerExcel/Database Connection.

Syntax: OLADimension(Connection, Dimension, Member)

OR

OLADimension(Connection, Dimension, MemberIndex)

Connection: Enter the PowerExcel connection which contains the information about the Olation server URL and the source database name.

Dimension: Enter the name of the Dimension or the cell reference that contains the name of the Dimension where the Member to be returned exists.

Member: Enter the name of the Member or the cell reference that contains the name of the Member you wish to return.

Member Index: The index number corresponding to the Member you want to return.

Remarks:

- The PowerExcel Connection must exist.
- The Olation Web Service must be running.
- The Database must be opened and running in the specified server.
- The 'Connection' and 'Dimension' parameters are compulsory.
- All component Members of Dimensions within the database are each assigned an index number starting from 1, 2, 3... and so on. If there is no Member assigned to that index number, then it will return a #NAME? error.

Example: OLAMember (Connection, Dimension, MemberIndex)

For this example, we will use the **OLAMember** function to identify and make a list of all the Members that exist for the Dimensions in our source database (*USING_OLATION*).

- First establish a connection a the target database. In cell, A1 type in Database connection (cells that are descriptive—i.e., non-formula-derived—are blue-highlighted for easy identification), then go to cell B1 and use the OLADatabase function to establish a connection to the target database (in the example, the Database connection is =@OLADatabase("USING_OLATION").
- For ease in copying the functions across other cells, we will make use of index numbers and apply absolute references to the OLADimension and **OLAMember** formula functions. Row 4, starting cell B4, type numbers **1 to 10** (type in cells **B4 to K4**). In the row above, enter the term **Dimensions**.

In cells **A9 to A27**, type the numbers **1 to 20** and put the term **MemberIndex** in cell **A8** (all as shown in the following image.)

	A	В	с	D	E	F	G	н	I	J	к	L
1	Database Connection	USING_OLATION										
2 3												
						Dimensio	ins					
4		1	2	3	4	5	6	7	8	9	10	
5		Account										
6												
7						Member	rs					
	MemberIndex											
9	1											
10	2											
11	3											
12	4											
13	5											
14	6											
15	7											
16 17	8											
17	9											
19	10											
20	11											
20	12											
22	14											
23	15											
24	16											
25	17											
26	18											
27	20											
28												

 In cells B5 to K5, use the OLAMember function to pull in the Dimensions that exist within the USING_OLATION database. In the example, define the formula in cell B5 as: =OLADimension(\$B\$1,B\$4).

A١	VERAGE		-	: ×	$\checkmark f_x$	=OLADin	nension(<mark>\$B</mark> \$	\$1, <mark>B\$4</mark>)			
		В	с	D	E	F	G	н	I.	J	К
1	Database Connection	USING_OLATION									
2											
3						Dimensio					
4		1	2	3	4	5	6	7	8	9	10
5		\$B\$1,B\$4)									
б											
7						Member	s				
	Memberindex										
9	1										
10 11	2										
12											
12 13	5										
14											
15											
16	, , , , , , , , , , , , , , , , , , , ,										
17	9										
18	10										
19	11										
20	12										
21	13										
22	14										
23	15										
24	16										
25	17										
26	18										
27	20										
28											

• Copy the formula to cells C5 to K5. Click F9 to refresh the Excel values.

K5	j			-	× ✓	f _x =	OLADimension(\$B\$1,K\$4)			
	А	В	с	D	E	F	G	н	I	J	К
1	Database Connection	USING_OLATION									
2											
3							D	imensions			
4		1	2	з	4	5	6	7	8	9	10
5		Account	Version	Month	Region	Product	PRODUCT Test	SALES Measure	PRODUCT_SALES Measure	Multidim cube Measure	#NAME?
б											Ī
7							1	Vembers			
	MemberIndex										
9	1										
10	2										
11	3										
12	4										
13	5										
14 15	b 7										
15	/										
17	9										
18	10										
19	11										
20	12										
21	13										
22	14										
23	15										
24	16										
25	17										
26	18										
27	20										
28											

- Next use the **OLAMember** function to create a list of Members for each Dimension that exist within the *USING_OLATION* database: in Cell **B9**, click next to the **Function** button located beside the formula bar. The Insert Function dialog box appears.
- In the category list, select PowerExcel.ExcelFunctions; click OLAMember and click OK. The Function Arguments dialog box appears. This is where you will define the OLAMember formula.
- In the Function Arguments dialog, click on the Connection field, then click on cell B1, which contains the Database connection reference. Notice that the Database connection name "USING_OLATION" appears beside the connection field.
 Note: You can use the absolute reference to easily copy the formulas across to other cells: \$B\$1.
- Click on the **Dimension** field, then click on cell **B5**, which contains the Dimension reference. Note that the Dimension name "Account" appears beside the Dimension field. **Note:** You can again use an absolute reference for this formula: **B\$5**.
- Lastly, click on the **Member** field, then click on cell **A9**, which will dictate the index value for the last parameter. Again, use an absolute reference along the columns: **\$A9**.
- The Function Arguments dialog will look as follows:



BS)			•	× 🗸	f _x =	OLAMember(\$ B\$1,B\$5,\$A9)			
	А	В	с	D	E	F	G	н	I	J	К
1	Database Connection	USING_OLATION									
2											
3								Dimensions			
4		1	2	З	4	5	6	7			
5		Account	Version	Month	Region	Product	PRODUCT Te	st SALES Measure	PRODUCT_SALES Measure	Multidim cube Measure	#NAME?
6											
7	MemberIndex							Members			
8 9		\$1,B\$5,\$A9)	1								
9 10	1	141,052,562)	+								
11	3										
12	4										
13	5						Function Argum	ents		? X	
14	6						-				
15	7	,					OLAMember				
16	8	1					Connection \$		= "USING_OLATI	"NC	
17	9	1					Dimension E	\$5	1 = "Account"		
18	10	·					Member \$	A9	<u>↑</u> = 1		
19	11								= "All"		
20	12					1	No help available				
21	13							Member			
22	14										
23	15										
24 25	16					I	Formula result =	All			
25	17						Help on this fund	tion	OK	Cancel	
20	20										
28	20										

• Click OK. This will return the Member All. Note the cell references in the following image:

A١	/ERAGE			•	× 🗸	<i>f</i> _x =	OLAMember(\$B	\$1, <mark>B\$</mark> 5,\$A9)			
	А	В	с	D	E	F	G	н	I	J	к
	Database Connection	USING_OLATION									
2											
3						_		mensions			
4 5		1		3	4	5 Baseduat	6	7			10
5		Account	Version	Nonth	Region	Product	PRODUCT Test	SALES Measure	PRODUCT_SALES Measure	wuitidim cube weasure	#NAME r
7							Ν	1embers			
	MemberIndex							iembery			
9		\$B\$1,B\$5,\$A9)									
10	2										
11	3										
12	4	L									
13	5										
14	6										
15 16	7										
17	0										
18	10										
19	11										
20	12										
21	13	1									
22	14										
23	15										
24	16										
25	17										
26 27	18										
27	20										
28											

Function Argu	iments					?	×
OLAMember							
Connection	\$B\$1		Ť	=	"USING_OLATION"		
Dimension	B\$5		Ť	=	"Account"		
Member	\$A9		Ť	=	1		
No help availat		nnection		=	"All"		
Formula result <u>Help on this fu</u>					ок	Ca	ncel

Cell References:

=OLAMember(\$B\$1,B\$5,\$A9)

- \$B\$1- the Database name or the PowerExcel connection name/cell reference that contains the name of the Database or the PowerExcel connection, i.e., USING_OLATION
- **B\$5** the Dimension name having the index value of 1 in the USING_OLATION Database, i.e., **Account**
- o \$A9- the Member Index number or cell reference, i.e., 1

K27	,		~	: × -	f _x =@01	LAMember(\$B\$1,I	K\$5,\$A27)				
	А	В	с	D	E	F	G	н	I	J	K
1 0	atabase Connection	USING_OLATION									
2											
3							Dimensio	ons			
4		1	2	3	4	5	6	7	8	9	10
5		Account	Version	Month	Region	Product	PRODUCT Test	SALES Measure	PRODUCT_SALES Measure	Multidim cube Measure	#NAME?
5											
7							Member	rs			
8 1	VemberIndex										
1		. All		All		All		Amount	Amount	Amount	#VALUE!
0		Margin	Actual	Total Quarter		Current Product		#NAME?	#NAME?	Text	#VALUE!
1	-	Sales	Budget	January	North America	New Product 1	В	#NAME?	#NAME?	#NAME?	#VALUE!
2		Cost of Sales	#NAME?	February	0		С	#NAME?	#NAME?	#NAME?	#VALUE!
3	5	Margin Pont		March	Brazil	New Product 3	#NAME?	#NAME?	#NAME?	#NAME?	#VALUE!
4	6	#NAME?	#NAME?	April	Canada	New Product 4	#NAME?	#NAME?	#NAME?	#NAME?	#VALUE!
5	7	#NAME?		May	Mexico	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#VALUE!
6	8	#NAME?		June	United States	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#VALUE!
7	9	#NAME?		July	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#VALUE!
8	10			August	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#VALUE!
9	11	#NAME?	#NAME?	September	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#VALUE!
0	12	#NAME?	#NAME?	October	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#VALUE!
1	13	#NAME?	#NAME?	November	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#VALUE!
2	14		#NAME?	December	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#VALUE!
3	15		#NAME?	1st Quarter	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#VALUE!
4	16		#NAME?	2nd Quarter	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#VALUE!
5	17	#NAME?	#NAME?	3rd Quarter	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#VALUE!
6	18	#NAME?	#NAME?	4th Quarter	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#VALUE!
7	20	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#NAME?	#VALUE!
28											
29											

• Now, copy this formula across the range **B9:K27**.

• Press **F9** or refresh the Excel worksheet. You will see that a full list of the Members appears, by Dimension, in the USING_OLATION database.

10.OLAPivotTable

Function Description: This function, when used as the means to bring data into a Slice, creates a sophisticated array of data that enables a user to pivot or re-arrange data, easily apply data constraints, and quickly customize the spreadsheet view.

Syntax: OLAPivotTable(Connection,Cube,Dimension1,Dimension2 Dimension3,..., DimensionN,CellLocation,True/False1,True/False2,True/False3)

Connection: The PowerExcel connection which contains the information about the Olation server URL and the source database name.

Cube: The name of the source/target Cube; or enter the cell reference that contains the name of the source or target Cube you wish to establish connection to.

Dimension1 to DimensionN: The related Dimension references.

CellLocation: the cell location where the OLAPivotTable will start to bring in data

True/False1: relates to checkbox Constrain Empty Rows

True/False2: relates to checkbox Delete Removed Rows

True/False3: relates to checkbox Expandable Members (under development)

Remarks:

- The PowerExcel Connection must exist.
- The Olation Web Service must be running.
- The Database must be opened and running in the specified server.
- The 'Connection', 'Cube' and 'Dimension' parameters are compulsory.
- CellLocation. TrueFalse1, TrueFalse2, TrueFalse3 are compulsory.

Example: OLAPivotTable(Connection,Cube,Dimension1,Dimension2,Dimension3,..., DimensionN,CellLocation,True/False1,True/False2,True/False3)

The Example Slice below shows a PowerExcel Perspective Slice. Let us look at the corresponding cell references:

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			low	Month	I	Range		\$A\$11:\$A\$28								
	FALSE, FAI															
C			711	Sales		Margin		Cost of Sales	Margin Pont							
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	Total Qua	arter	50685.10857		55672		60663	-4991	1.089650093							
	January		85431.04054		91995		98558	-6563	1.071340834							
	1st Quarti	er	57846.00285		71924		86001	-14077	1.195720483							
	February Moreh		-29822.49618		-21285		12748	-8537	0.598919427							
_	March April		2237.458495		1214 1700		191	1023	0.157331137							
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	2nd Quarl Mov	(e)	8251.205852		5273		2297		0.435615399							
_	May Jupo		2834.656933		1788 1785		742 776		0.414988814							
	June July		2794.719269 3006.656098		1/85		326		0.434733894 0.195678271							
_	3rd Quart	or	8498.253552		3974		-549	4523	-0.138147962							
_		.ei	3451.883057		1391		-670	4323	-0.481667865							
_	∆ugust Septemb	or	2039.714397		917		-205	1122	-0.223555071							
	October	ei	-5696.342804		-6223		-6749	526	1.084525149							
	4th Quart	or	-23910.35369		-25499		27086		1.062237735							
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Help on this function

K 10

Formula result = OLAPivotTable

No help available.

Help on this function

Cell References:

=OLAPivotTable(\$B\$1,\$B\$2,\$B\$3:\$E\$3,\$B\$4:\$E\$4,\$B\$5:\$E\$5, \$B\$6:\$E\$6,\$B\$7:\$E\$7,\$B\$11,FALSE,FALSE,FALSE)

- \$B\$1- the Database name or the PowerExcel connection name/cell reference that contains the name of the Database or the PowerExcel connection, i.e., USING_OLATION
- \$B\$2 the Cube in the Database, i.e., SALES Cube
- \$B\$3:\$E\$3 the *Amount* Member in the *SALES Measure* Dimension [Filter reference]
- o \$B\$4:\$E\$4 the Variance Member in the Version Dimension [Filter reference]
- o \$B\$5:\$E\$5 the World Member in the Region Dimension [Filter reference]
- \$B\$6:\$E\$6 the Range relevant to the *Account* Dimension [Column reference]. This will dictate what Members will be displayed along Columns.
- \$B\$7:\$E\$7 the Range relevant to the *Month* Dimension [Row reference]. This will dictate what Members will be displayed along Rows.
- \$B\$11 this the cell location where the OLAPivotTable will start to bring in data.
- o FALSE the checkbox Constrain Empty Rows is disabled
- $\circ \quad \mathsf{FALSE}-\mathsf{the\ checkbox\ Delete\ Removed\ Rows\ is\ disabled}$
- o FALSE the checkbox Expandable Members is disabled (under development)
- Now, delete a cell value corresponding to a fact data, for example value in cell B12.
 Notice that once you refresh the PowerExcel Slice, the value will be returned in the cell.
- Next, delete ALL fact data within the PowerExcel Slice; once again, upon hitting the Refresh button or F9, all the data will be returned in the Slice.

11.OLAPowerQuery

Function Description: The PowerExcel Power Analyzer dynamically creates a Slice in Excel in a powerful format that leverages Excel's own Power Query capabilities. In sum, it gives the user the ability to apply any queries to the table, apply numerous filters, easily reorder the table, and record/automate/undo changes, among other capabilities.

The important thing to take note of when using the PowerExcel Power Analyzer is that it is updated using the **Refresh** button found in the PowerExcel tab of the Excel ribbon. The F9 key WILL NOT refresh a PowerExcel Slice that has the Power Analyzer as the Slice type.

Syntax: OLAPowerQuery(Connection,Cube,Dimension1,Dimension2, Dimension3,..., DimensionN,Table_ExternalData_1)

Connection: The PowerExcel connection which contains the information about the Olation server URL and the source database name.

Cube: The name of the source/target Cube; or enter the cell reference that contains the name of the source or target Cube you wish to establish connection to.

Dimension1 to DimensionN: The related Dimension references.

Table_ExternalData_1: as referenced by Excel, the range of cells where the data appears.

Remarks:

- The PowerExcel Connection must exist.
- The Olation Web Service must be running.
- The Database must be opened and running in the specified server.
- The 'Connection', 'Cube' and 'Dimension' parameters are compulsory
- Table_ExternalData_1 is compulsory.

Example: OLAPowerQuery(Connection,Cube, Dimension1, Dimension2, Dimension3,..., DimensionN,Table_External_Data_1)

The example below shows a PowerExcel Power Analyzer Slice. Let us look at the corresponding cell references:

AS)		*	: X		@OLAPowerQue \$7,Table_Exterr			\$2,\$B\$3:\$E\$3,\$B\$4:\$E\$4,\$B\$5:\$E\$5,\$B\$6:\$E\$6,\$B\$7:
1	A	В	С	D	E	F	G		PowerExcel • •
	Database:	USING_OLATION							FOWEIEXCEI
2	Cube:	SALES							Database Cube
3	Dimensions:	Filter	SALES Measure						USING_OLATION V SALES V
4		Filter	Version	Members					T Filters
5		Filter	Region	Members	World				12 SALES Measure: Amount
б		Column	Account	Subsets	ALL				ピ. Version: Variance
7		Row	Month	Subsets	ALL				ピ. Region: World
8									
9	OLAPowerQuery								
10		All 🔽	Sales 💌	Margin 💌	Cost of Sales 💌	Margin Pent 💌			Columns
11	All	50685.10857	55672	60663	-4991	1.089650093			Columns
12	Total Quarter	50685.10857	55672	60663	-4991	1.089650093			Account: ALL
13	January	85431.04054	91995	98558	-6563	1.071340834			
14	1st Quarter	57846.00285	71924	86001	-14077	1.195720483			
15	February	-29822.49618	-21285	-12748	-8537	0.598919427			
16	March	2237.458495	1214	191	1023	0.157331137			Rows
17	April	2621.829651	1700	779	921	0.458235294			본 Month: ALL
18	2nd Quarter	8251.205852	5273	2297	2976	0.435615399			
19	May	2834.656933	1788	742	1046	0.414988814			
20	June	2794.719269	1785	776	1009	0.434733894			
21	July	3006.656098	1666	326	1340	0.195678271			Step 1 - Location Step 2 - Slice Type
22	3rd Quarter	8498.253552	3974	-549	4523	-0.138147962			Current Sheet: \$A\$1 🔀 OPerspective
23	August	3451.883057	1391	-670	2061	-0.481667865			O New Worksheet OB Functions
24	September	2039.714397	917	-205	1122	-0.223555071			New Workbook Power Analyzer
25	October	-5696.342804	-6223	-6749	526	1.084525149			Step 3 - Additional Options
26	4th Quarter	-23910.35369	-25499	-27086	1587	1.062237735			Hide Empty Rows Allow Excel Functions
27	November	-8906.880598	-9632	-10357	725	1.075269934			
28	December	-9307.130289	-9644	-9980	336	1.034840315			Delete Removed Rows Format Cells by Type
29									Dynamic Row Labels
30								-	Step 4 -
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Rea	idy 🔟						La Dis	olav S	ettings 📰 🗉 — — + 100%

• Click on the **OLAPowerQuery** formula function on cell A9 then click on the Formula bar (in the screenshot below, the cursor is placed at the end of the formula).

A	/ERAGE			•	: ×				\$2,\$B\$3:\$E\$3, \$B\$4:\$E\$4,\$ B\$5:\$E\$5, \$B\$6:\$E\$6,\$B\$7 :
							\$E\$7,Table_Extern	nalData_1)	
	A		В	С	D	E	F	G 🔺	PoworEvcol ▼ X
1	Database:	Us	ING_OLATION						PowerExcel • ×
2	Cube:	S,A	LES						Database Cube
3	Dimensions:	Fil	ter	SALES Measure	Members	Amount	Ī		USING_OLATION V SALES V
4		Fil	ter	Version	Members	Variance	Ī		T Filters
5		Fil	ter	Region	Members	World	Ī		2 SALES Measure: Amount
6		Co	lumn	Account	Subsets	ALL	Ī		2 Variance
7		Ro	W	Month	Subsets	ALL	Ī		ピ. Region: World
8									
9	ta_1)								
10	Month	✓ Al	I ▼	Sales 💌	Margin 💌	Cost of Sales	💌 Margin Pent 💌		
11	All		50685.10857	55672	60663	-49	91 1.089650093		Columns
12	Total Quarter		50685.10857	55672	60663	- 49	91 1.089650093		본 Account: ALL
13	January		85431.04054	91995	98558	-65	53 1.071340834		
14	1st Quarter		57846.00285	71924	86001	-140	77 1.195720483		
15	February		-29822.49618	-21285	-12748	-853	37 0.598919427		
16	March		2237.458495	1214	191	10:	23 0.157331137		🚰 Rows
17	April		2621.829651	1700	779	9:	21 0.458235294		14 Month: ALL
18	2nd Quarter		8251.205852	5273	2297	29	76 0.435615399		
19	May		2834.656933	1788	742	104	46 0.414988814		
20	June		2794.719269	1785	776	10	0.434733894		
21	July		3006.656098	1666	326	134	40 0.195678271		Step 1 - Location Step 2 - Slice Type
22	3rd Quarter		8498.253552	3974	-549	45:	23 -0.138147962		Current Sheet: \$A\$1 Perspective
23	August		3451.883057	1391	-670	200	51 -0.481667865		O New Worksheet OB Functions
24	September		2039.714397	917	-205	112	22 -0.223555071		New Workbook Over Analyzer
25	October		-5696.342804	-6223	-6749	53	26 1.084525149		Step 3 - Additional Options
26	4th Quarter		-23910.35369	-25499	-27086	15	37 1.062237735		
27	November		-8906.880598	-9632	-10357	7.	1.075269934		Hide Empty Rows Allow Excel Functions
28	December		-9307.130289	-9644	-9980	3	36 1.034840315		Delete Removed Rows Format Cells by Type
29									Dynamic Row Labels
30								-	Step 4 -
	< >	Sheet1	+		:	•			
Edi	t 🐻							교 Display S	iettings 🏢 🔟 — — — — + 100%

Function Argu	uments			?		×		
OLAPowerQu	ery							
Connection	\$B\$1	:	🛨 = "USING_OLATION"			^		
Cube	\$B\$2	-	▲ = "SALES"					
K1	\$B\$3:\$E\$3	:	🛨 😑 {"Filter", "SALES Measure", "	Mem	be			
K2	\$B\$4:\$E\$4	-	🛨 = {"Filter", "Version", "Membe	rs", "V	/ar			
КЗ	\$B\$5:\$E\$5	Function Argu	Iments				?	×
	Conne = OLAPowerQuer	OLAPowerQue K3 K4 K5 K6 K7	\$B\$5:\$E\$5 \$B\$6:\$E\$6 \$B\$7:\$E\$7 Table_ExternalData_1	1 1 1 1 1 1	=	{"Colum {"Row","	"Region", "Members", "Worlc n", "Account", "Subsets", "ALL 'Month", "Subsets", "ALL "} 685.1085658542,55672,6066	*
<u>Help on this fu</u>	incion	No help availat	K3 = OLAPowerQuery	_		"ΟLΑΡοι	werQuery" OK Canc	

Cell References:

=OLAPowerQuery(\$B\$1,\$B\$2,\$B\$3:\$E\$3,\$B\$4:\$E\$4,\$B\$5:\$E\$5, \$B\$6:\$E\$6,\$B\$7:\$E\$7, Table_ExternalData_1)

- \$B\$1- the Database name or the PowerExcel connection name/cell reference that contains the name of the Database or the PowerExcel connection, i.e., USING_OLATION
- \$B\$2 the Cube in the Database, i.e., SALES Cube
- \$B\$3:\$E\$3 the *Amount* Member in the *SALES Measure* Dimension [Filter reference]
- \$B\$4:\$E\$4 the Variance Member in the Version Dimension [Filter reference]
- \$B\$5:\$E\$5 the *World* Member in the *Region* Dimension [Filter reference]
- \$B\$6:\$E\$6 the Range relevant to the *Account* Dimension [Column reference]. This will dictate what Members will be displayed along the Columns.
- \$B\$7:\$E\$7 the Range relevant to the *Month* Dimension [Row reference]. This will dictate what Members will be displayed along the Rows.
- Table_ExternalData_1 the Range (aka, Table) where the data will appear.

- Delete a cell value corresponding to a fact data, for example the value in Cell B12. Press F9. Notice that the cell stays blank.
- Next, click the Refresh button found in the PowerExcel Tab of the Excel ribbon. The table data is now updated/refreshed, and the value re-appears on cell B12.
 This confirms that the F9 key does not work on the Power Analyzer Slice. Use the REFRESH button when updating the PowerExcel Power Analyzer Slice.
- Next, try to delete ALL fact data within the PowerExcel Slice (i.e., **B11:F28**), and click the **Refresh button** found along the PowerExcel Tab of the Excel ribbon. The values return—which shows the dynamic connection to the source data.

12.OLAQueryMember

Function Description: This function covers a 'cell range' or a 'group of cells' that define the Dimension Name and the corresponding Member/s that will be displayed along the Filter area of a PowerExcel Power Analyzer Slice. The 'cell range' covered by this function must be updated simultaneously and changes will only be committed by use of the CTRL+SHIFT+ENTER keys.

To change the Display Members of a particular Dimension, click on all the cells covered by the OLAQueryMember function, change the last parameter and enter the exact name of the new Display Member then press Ctrl+Shift+Enter keys to commit the changes. Notice that the update is reflected across all the cells covered by the function.

Syntax: OLAQueryMember(Connection,Cube,Axis,index,Dimension,Member)

Connection: Enter the PowerExcel connection which contains the information about the Olation server URL and the source database name.

Cube: Enter the name of the source/target Cube; or enter the cell reference that contains the name of the source or target Cube you wish to establish connection to.

AXIS: This indicates the area of the PowerExcel Slice where the data will appear. This function is only applicable for the 'Filter' area.

Index: 0

[NOTE: When Filter is indicated, Index will always be "0", and changing this number will not change the value result in PowerExcel.]

Dimension: Specify the Dimension name or the cell reference that contains the name of the Dimension that exists within the specified Database above.

Member: Specify the Member name or the cell reference that contains the name of the preferred display Member along the Filter area of the specified Dimension.

Remarks:

- The PowerExcel Connection must exist.
- The Olation Web Service must be running.
- The Database must be opened and running on the specified server.
- The Cube must exist within the specified database.
- The Dimension must exist within the specified database.
- The Member must exist within the specified Dimension.
- All the parameters are compulsory since the function covers a 'range of cells'
- It is imperative that 'All' cells governed by the OLAQueryMember function be updated in order to successfully commit the changes to the formula.

Example: How the function appears when creating a Power Analyzer Slice

First, create a Power Analyzer Slice, then go to the 'Filter' section then go to the any of the 4 cells governed by the **OLAQueryMember** Function. This function is used to define the Members to be displayed along the Filter area of this PowerExcel Power Analyzer Slice. As mentioned in the description, this function is a 'Range Reference', meaning this covers a group of cells, and all of those cells will render the same formula. When you click on any of the four (4) cells governed by the **OLAQueryMember** function, you will notice that it is enclosed in 'Curly Brackets'. The Curly Brackets is an indicator that the PowerExcel function used is a 'Range Reference'.

- As in the example screenshot below, the OLAQueryMember formulas can be found in the cells B3:E3 (SALES Measure dimension), B4:E4 (Version dimension), and B5:E5 (Region dimension).
- When you click on the cell containing the OLAQueryMember formula (as in the example, the active cell is B3) notice that the OLAQueryMember formula that appears in the formula bar is enclosed in curly brackets. When you click through the cells that are part of the cell range—C3, D3 and E3—notice that they will show the same formula as that seen in cell B4:

{=OLAQueryMember(\$B\$1,\$B\$2,"Filter",0,"SALES Measure",\$F\$3)	{=OLAQuer	yMember(\$B\$ ⁻	1,\$B\$2,"Filter	",0,"SALES Meas	sure", \$F\$3)}
---	-----------	----------------------------	------------------	-----------------	-------------------------

					tice that the whole formula is enclosed in 'Curly kets' indicating that this is a RANGE REFERENCE
B	3		-	: × 🗸	f≈ {=OLAQueryMember(\$B\$1,\$B\$2,"Filter",0,"SALES Measure", \$F\$3)}
	А	В	с	D	E
1	Database:	USING_OLATION			
2	Cube:	SALES			
3	Dimensions:	Filter	SALES Measure	Amount	[{"dimensionname":"SALES Measure","type":"UNIQUE","members":[{"name":"Amount"}]}]
4		Filter	Version	Variance	[{"dimensionname":"Version","type":"UNIQUE","members":[{"name":"Variance"}]}]
5		Filter	Region	World	[{"dimensionname":"Region","type":"UNIQUE","members":[{"name":"World"}]}]
6		Column	Account	ALL	[{"dimensionname":"Account","type":"NAMED","name":"ALL"}]
7		Row	Month	ALL	[{"dimensionname":"Month","type":"NAMED","name":"ALL"}]
8					
9	OLAPowerQuery				
10	Month 🗾	Sales 🗾 💌	Margin 🗾 💌	Cost of Sales 💌	Margin Pcnt 🔽
11	January	90055	97603	-7548	1.083815446
12	2016	95446	102324	-6878	1.072061689
13	1st Quarter	68007	84125	-16118	1.237005014
14	February	-19986	-11447	-8539	0.572750926
15	March	-2062	-2031	-31	0.984966052
16	April	2885	1685	1200	0.584055459
17	2nd Quarter	10281	6721	3560	0.653730182
18	May	3417	2257	1160	0.660520925
19	June	3979	2779	1200	0.698416688
20	July	4574	3054	1520	0.667686926
	3rd Quarter	15640	11460	4180	0.732736573
	August	5201	3901	1300	0.750048068
	September	5865	4505	1360	0.768115942
24	October	762	262	500	0.343832021
25	4th Quarter	1518	18	1500	0.011857708
26	November	-589	-1089	500	1.848896435
27	December	1345	845	500	0.628252788
28					
29					
22					

By clicking in the formula bar area (in the next image, the mouse cursor is placed at the end of the formula), the cell references corresponding to the OLAQueryMember function will be outlined on the spreadsheet. The OLAQueryMember function returns Filter(B3), SALES Measure(C3), Amount(D3) and the cell that will =OLAQueryMember(\$B\$1,\$B\$2,"Filter",0,"SALES Measure",\$F\$3)

~~~	/ERAGE		*	× ✓	fr OLAQueryMember(\$B\$1,\$B\$2,"Filter",0,"SALES Measure",\$F\$3)	
	А	В	С	D	E	F
1	Database:	USING_OLATION				
2	Cube:	SALES				
3	Dimensions:	Measure",\$F\$3)	SALES Measure	Amount	[{"dimensionname":"SALES Measure","type":"UNIQUE","members":[{"name":"Amount")]}]	<u>I</u>
1		Filter	Version	Variance	[{"dimensionname":"Version","type":"UNIQUE","members":[{"name":"Variance"}]}]	
5		Filter	Region	World	[{"dimensionname":"Region","type":"UNIQUE","members":[{"name":"World"}]}]	
5		Column	Account	ALL	[{"dimensionname":"Account","type":"NAMED","name":"ALL"}]	
7		Row	Month	ALL	[{"dimensionname":"Month","type":"NAMED","name":"ALL"}]	
3						
_	OLAPowerQuery					
0	Month 🗾 💌	Sales 🗾 💌	Margin 📃 💌	Cost of Sales 🔽	Margin Pont 🔽	
	January	90055	97603	-7548	1.083815446	
2	2016	95446	102324	-6878	1.072061689	
3	1st Quarter	68007	84125	-16118	1.237005014	
4	February	-19986	-11447	-8539	0.572750926	
5	March	-2062	-2031	-31	0.984966052	
6	April	2885	1685	1200	0.584055459	
7	2nd Quarter	10281	6721	3560	0.653730182	
8	May	3417	2257	1160	0.660520925	
9	June	3979	2779	1200	0.698416688	
0	July	4574	3054	1520	0.667686926	
1	3rd Quarter	15640	11460	4180	0.732736573	
	August	5201	3901	1300	0.750048068	
	September	5865	4505			
-	October	762				
25	4th Quarter	1518	18	1500	0.011857708	
26	November	-589	-1089	500	1.848896435	
	December	1345	845	500	0.628252788	
8						
29						
	< → She	et1 (+)			: (	
dit	t Calculate 🗔					

Notice that the OLAQueryMember is also referencing cell F3. By clicking on cell F3, you will see the parameter that calls for the Member that will be used by the OLAQueryMember function.

'[{"dimensionname":"SALES Measure","type":"UNIQUE","members":[{"name":"Amount"}]}]

VERAGE				-	: ×	$\checkmark f_X$	=OLAQueryMe	nber(\$ <mark>B\$1,\$B\$2,"Filter",0,"SALES Measure",<mark>\$F\$3)</mark></mark>			
A		В	с		D			E	G		
Database:	USING	OLATION	l l								
Cube:	SALES										
Dimensions:	Measur	e",\$F\$3)	SALES Mea	asure	Amount	[{"dim	ensionname":"S/	LES Measure", "type": "UNIQUE", "members": [{"name": "Amount"}]}]			-
	Filter		Version		Variance			rsion","type":"UNIQUE","members":[{"name":"Variance"}]}]			
	Filter		Region		World			gion", "type": "UNIQUE", "members": [{"name": "World"}]}]			
	Column	ı	Account		ALL			count","type":"NAMED","name":"ALL"}]			
	Row		Month		ALL	[{"dim	ensionname":"N	nth","type":"NAMED","name":"ALL"}]			
OLAPowerQuery		_						_			
	Sales		Margin	_		es 💌 Margir	i Pont	▼			
January		90055		97603		-7548		1.083815446		_	
2016 1st Quarter		F3					- : ×	✓ fx ("{"dimensionname":"SALES Measure", "type":"UNIQUE", "memb	ers":[{"name":"Amou	unt''}]}]	
- 1			A		в	с	D	E		E C	G
		1 Databa		LISING	G OLATION	-					-
		2 Cube:		SALES		•					
		3 Dimer	sions:	Filter		SALES Mea	sure Amount	[{"dimensionname":"SALES Measure", "type": "UNIQUE", "members": [{"na	ame":"Amount"}]}]	<b>—</b>	_
		4		Filter		Version	Variance	[{"dimensionname":"Version", "type": "UNIQUE", "members": [{"name": "\		· · · ·	
		5		Filter		Region	World	[{"dimensionname":"Region","type":"UNIQUE","members":[{"name":"W	/orld"}]}]		
		6		Colur	nn	Account	ALL	[{"dimensionname":"Account","type":"NAMED","name":"ALL"}]			
		7		Row		Month	ALL	[{"dimensionname":"Month","type":"NAMED","name":"ALL"}]			
		8									
		9 OLAPC	werQuery								
		10 Month	<b>*</b>	Sales		Margin	🗾 🔽 Cost of Sale	s 🔽 Margin Pont		•	
		11 Januar	у		9005	5 9		548	1.08381544	6	
		12 2016			9544	6 10	- 2324	878	1.07206168	9	
		12 2010						118	1 00700501	4	
		13 1st Qu			6800				1.23700501		
					6800 -1998 -206	6 -1			0.57275092	6	

It is also referencing the Cube called "SALES"(\$B\$2) and is using the PowerExcel connection/OLADatabase connection called "USING_OLATION"(\$B\$1).
 Note: When you are on edit mode of a Range Reference type of formula, notice that the 'Curly Brackets' disappear. Click on Esc (Escape) to come out of the formula bar.

## **Cell References:**

=OLAQueryMember(\$B\$1,\$B\$2,"Filter",0,"SALES Measure",\$F\$3)

- \$B\$1- the Database name or the PowerExcel connection name/cell reference that contains the name of the Database or the PowerExcel connection, i.e., USING OLATION
- \$B\$2- the Cube name or the cell reference that contains the name of the Cube, i.e.,
   SALES
- o "Filter"- This indicate that the data will appear along the Filter area of the Slice
- "0"- [Note: this is a constant when Filter is indicated, and there will be no change if another number is used.]
- "SALES Measure" the Dimension name that exists within the database placed along the Filter area of the Slice
- \$F\$3- the Member names that exists within the specified Dimension that are referenced by that Cell: this the cell that contains the Member parameter that will be used by the function.

# 13.OLAQuerySubsets

**Function Description:** This function covers a 'cell range' or a 'group of cells' that define the Dimension and corresponding Members that will be displayed along the Rows or Columns of a PowerExcel Slice. The 'cell range' covered by this function must be updated simultaneously and changes will only be committed by use of the CTRL+SHIFT+ENTER keys. This function applies to the PowerExcel Power Analyzer Slice.

To change the Display Members along the column or row of a PowerExcel Slice, click on all the cells covered by the OLAQuerySubsets function, change to the preferred 'Subset name' or the last parameter and enter the 'new target Subset'. Press the Ctrl+Shift+Enter keys to commit the changes. Notice that the update is reflected across all the cells covered by the function.

## **Syntax:** OLAQuerySubsets(Connection,Cube,Axis,index,Dimension,Subsets)

Connection: Enter the PowerExcel connection which contains the information about the Olation server URL and the source database name.

Cube: Enter the name of the source/target Cube; or enter the cell reference that contains the name of the source or target Cube you wish to establish connection to.

AXIS: This indicates the area of the PowerExcel Slice where the data will appear This function is only applicable for the 'Rows' and 'Columns' area.

#### Index: 0

[NOTE: When there are no "stacked Dimensions" in Row or Column, "0" will always show; If there are stacked Dimensions, the number will reflect the order of the Rows or Columns, starting with "1" as the "topmost" in the stack, and continuing.]

Dimension: Specify the Dimension name or the cell reference that contains the name of the Dimension that exists within the specified Database above.

Subsets: The Subset name corresponding to the target subset of Members to be displayed along the row or column.

### **Remarks:**

- The PowerExcel Connection must exist.
- The Olation Web Service must be running.
- The Database must be opened and running in the specified server.
- The Cube must exist within the specified database.
- The Dimension must exist within the specified Database.
- The Subset must exist within the specified Dimension.
- All the parameters are compulsory because the function covers a 'range of cells'
- It is imperative that 'All' cells governed by the OLAQuerySubsets function be updated in order to successfully commit the changes to the formula.

#### Example 1: How the function appears when creating a Power Analyzer Slice

First, create a Power Analyzer Slice, then go locate the **OLAQuerySubsets** function, operative for Rows and Columns. When you have located the **OLAQuerySubsets** function, click on any of the 4 cells governed by the **OLAQuerySubsets** Function. As mentioned in the description, this function is a 'Range Reference', meaning this covers a group of cells, and all of those cells will render the same formula. When you click on any of the four (4) cells governed by the **OLAQuerySubsets** function, you will notice that it is enclosed in 'Curly Brackets'. The Curly Brackets is an indicator that the PowerExcel function used is a 'Range Reference' (see highlighted in the image below).

- As in the example screenshot below, the OLAQuerySubsets formulas can be found in the cells B6:E6 (display Members along the Columns for the *Account* dimension) and B7:E7 (display Members along the Rows for the *Month* dimension). As an example, you can see the cells governed by the OLAQuerySubsets for the *Month* dimension highlighted in pink
- When you click on the cell containing the OLAQuerySubsets formula (as in the example, the active cell is B7) notice that the OLAQuerySubsets formula that appears in the formula bar is enclosed in curly brackets. When you click through the cells that are part of the cell range—C7, D7 and E7—notice that they will show the same formula as that seen in cell B4:

37		Ŧ	: × 🗸	🐅 🛛 🔚 🚛 🚛 🚛 🖡 🚛 🚛 🚛 🚛 🚛 🚛 🚛 🚛 🚛 🚛 🚛 🚛 🚛	
А	В	с	D	E	F
Database:	USING OLATION				
Cube:	SALES				
Dimensions:	Filter	SALES Measure	Amount	[{"dimensionname":"SALES Measure","type":"UNIQUE","members":[{"name":"Amount"}]}]	
	Filter	Version	Variance	[{"dimensionname":"Version","type":"UNIQUE","members":[{"name":"Variance"}]}]	
	Filter	Region	World	[{"dimensionname":"Region","type":"UNIQUE","members":[{"name":"World"}]}]	
	Column	Account	ALL	[{"dimensionname":"Account","type":"NAMED","name":"ALL"}]	
	Row	Month	ALL	[{"dimensionname":"Month","type":"NAMED","name":"ALL"}]	
OLAPowerQue	ry				
) Month	💌 Sales 🛛 💌	Margin 📃 💌	Cost of Sales 💌	Margin Pont 🔽	
January	90055	97603	-7548	1.083815446	
2016	95446	102324	-6878	1.072061689	
1st Quarter	68007	84125	-16118	1.237005014	
February	-19986	-11447	-8539	0.572750926	
5 March	-2062	-2031	-31	0.984966052	
i April	2885	1685	1200	0.584055459	
7 2nd Quarter	10281	6721	3560	0.653730182	
3 May	3417	2257	1160	0.660520925	
June	3979	2779	1200	0.698416688	
) July	4574	3054	1520	0.667686926	
I 3rd Quarter	15640	11460	4180	0.732736573	
August	5201	3901	1300	0.750048068	
September	5865	4505	1360	0.768115942	
l October	762	262	500	0.343832021	
5 4th Quarter	1518	18	1500	0.011857708	
November	-589	-1089	500	1.848896435	
December	1345	845	500	0.628252788	
1					
9					

#### {=OLAQuerySubsets(\$B\$1,\$B\$2,"Row",0,"Month",\$F\$7)}

Notice that the whole formula is enclosed in 'Curly

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By clicking in the formula bar area (in the next image, the mouse cursor is placed at the end of the formula), the cell references corresponding to the OLAQuerySubsets function will be outlined on the spreadsheet. The OLAQuerySubsets function returns Row(B7), Month(C7), ALL(D7) and

[{"dimensionname":"Month","type":"NAMED","name":"ALL"}] (E7).

A	/ERAGE		*	: × •	∫		
	А	В	с	D	E	F	C
1	Database:	USING OLATION	1				
2	Cube:	SALES					
3	Dimensions:	Filter	SALES Measure	Amount	[{"dimensionname":"SALES Measure","type":"UNIQUE","members":[{"name":"Amount"}]}]		
4		Filter	Version	Variance	[{"dimensionname":"Version","type":"UNIQUE","members":[{"name":"Variance"}]}]		
5		Filter	Region	World	[{"dimensionname":"Region","type":"UNIQUE","members":[{"name":"World"}]}]		
6		Column	Account	ALL	[{"dimensionname":"Account","type":"NAMED","name":"ALL"}]		
7		"Month",\$F\$7)	Month	ALL	[{"dimensionname":"Month","type":"NAMED","name":"ALL"}]		I
8							
9	OLAPowerQuery						
10	Month 🗾 💌	Sales 💌	Margin 🗾 💌	Cost of Sales	Margin Pont 🗾		
	January	90055	97603	-754			
	2016	95446	102324	-687	8 1.072061689		
13	1st Quarter	68007	84125	-1611	8 1.237005014		
	February	-19986			9 0.572750926		
15	March	-2062	-2031	-3	1 0.984966052		
	April	2885	1685	120	0 0.584055459		
17	2nd Quarter	10281	6721	356	0 0.653730182		
18	May	3417	2257	116	0 0.660520925		
	June	3979	2779	120	0 0.698416688		
	July	4574					
	3rd Quarter	15640					
	August	5201	3901				
	September	5865	4505	136	0 0.768115942		
	October	762					
	4th Quarter	1518					
	November	-589					
	December	1345	845	50	0 0.628252788		
28							
29							
30							

Notice that the OLAQuerySubsets is also referencing cell F7. By clicking on cell F7, you will see the parameter that calls for the Member that will be used by the OLAQuerySubsets function.

'[{"dimensionname":"Month","type":"NAMED","name":"ALL"}]

≏\√E	ERAGE				- I	×	✓ f _x	=OLAQue	rySubsets	(\$B\$1,\$B\$2,"Row",0,"Month", <mark>\$F\$7</mark> )		
	А		В	с		D				E F	G	
	Database:	-	OLATION									
_	Cube:	SALES										
3 0	Dimensions:	Filter		SALES Meas						Measure","type":"UNIQUE","members":[{"name":"Amount"}]}]		
		Filter		Version	Varia					n","type":"UNIQUE","members":[{"name":"Variance"}]}]		
i		Filter		Region	World	k				","type":"UNIQUE","members":[{"name":"World"}]}]		
		Colum		Account	ALL					nt","type":"NAMED","name":"ALL"}]		
		"Month	h",\$F\$7)	Month	ALL		[{"dimer	nsionnam	e":"Month	","type":"NAMED","name":"ALL"}]		
-	OLAPowerQuery		_									
_		Sales	<b>*</b>	Margin	Cost o	of Sales	💌 Margin F	cnt		<b>▼</b>		
_	January		F7					- ·	× ✓	fx ([{"dimensionname":"Month","type":"NAMED","name":"ALL"]]		
_	2016		17						~ *	Tt unitersionname : Month, type : NAMED , Hame : ALE J		
3 1	1st Quarter			A	В		С		D	E		
			1 Datab	ase:	USING_OL	ATION						
			2 Cube:		SALES							
			3 Dime	nsions:	Filter		SALES Meas	ure Amo	unt	[{"dimensionname":"SALES Measure", "type":"UNIQUE", "members":[{"name"	: \mount"}]}]	
			4		Filter		Version	Varia	nce	[{"dimensionname":"Version","type":"UNIQUE","members":[{"name":"Varian	nce")}}	
			5		Filter		Region	Worl	d	[{"dimensionname":"Region","type":"UNIQUE","members":[{"name":"World"	1303	
			6		Column		Account	ALL		[{"dimensionname":"Account","type":"NAMED","name":"ALL"}]		_
			7		Row		Month	ALL		[{"dimensionname":"Month","type":"NAMED","name":"ALL"}]	ALL"}]	
			8									
				owerQuery								
			10 Mont	h 💌	Sales		Margin			Margin Pont		
			11 Janua	ry		90055		603	-7548		1.083815446	
			12 2016			95446		324	-6878		1.072061689	
			13 1st Ou	uarter		68007	84	125	-16118		1.237005014	

It is also referencing the Cube called "SALES"(\$B\$2) and is using the PowerExcel connection/OLADatabase connection called "USING_OLATION"(\$B\$1).
 Note: When you are on edit mode of a Range Reference type of formula, notice that the 'Curly Brackets' disappear. Click on Esc (Escape) to come out of the formula bar.

### **Cell References:**

=OLAQuerySubsets(\$B\$1,\$B\$2,"Row",0,"Month",\$F\$7)

- \$B\$1- the Database name or the PowerExcel connection name/cell reference that contains the name of the Database or the PowerExcel connection, i.e., USING_OLATION
- \$B\$2- the Cube name or the cell reference that contains the name of the Cube, i.e.,
   SALES
- o "Row"- this indicate that the data will appear along the Row area of the Slice
- "0" this indicates the index number: "0" if there are no stacked Dimensions in Columns or Rows; if either are stacked, the index number will be "1" for the topmost Dimension, "2" for the next, etc.]
- o "Month"- the Dimension name that exists within the database
- \$F\$7- the Member names that exists within the specified Dimension that are referenced by that Cell: <u>this the cell that contains the Member parameter that will be</u> <u>used by the function.</u>

# 14.OLARead

**Function Description:** PowerExcel's Read Formula function reads a value from a specific multidimensional data point in the PowerExcel model and returns it to a specified cell in an Excel worksheet. As opposed to PowerExcel ReadWrite formula, this OLARead function does not have a writeback capability, hence it can only 'Read' specific data from the source database.

### **Syntax:** OLARead(Connection,Cube,Member1,Member2,...,MemberN)

Connection: The PowerExcel connection that contains the information about the Olation Server URL and the source database name.

Cube: The name of the source/target Cube; or the cell reference that contains the name of the source or target Cube you wish to establish a connection to.

Member1 to MemberN: The related Member references.

#### **Remarks:**

- The PowerExcel Connection must exist.
- The Olation Web Service must be running.
- The Database must be opened and running in the specified server.
- The 'Connection', 'Cube' and 'Member' parameters are compulsory.

**Example1:** OLARead(Connection,Cube,Member1,Member2,...,MemberN)

- Using an existing Slice, select a cell to the right of the field of data, e.g., Cell H11.
- In the Excel formula bar, click on the Insert Function symbol (*f_x*). The Insert Function window will appear.
- In the Or select a category drop-down, select PowerExcel.ExcelFunctions.
- Select OLARead Click OK.
- For Connection, you can reference Cell **B1** from the sample Slice (or type B1); next, reference the Cube (Cell **B2**).
- Type in the names of Dimension Members:
  - For Sales Measure, type Amount.
  - For Version, type Variance.
  - For Region, type United States (Note: this is the key point of difference with the existing Slice, which shows World—as shown by the arrow in the following image).
  - For Account, type Sales.
  - For Month, type **Total Quarter**.

H:	.1	•	× ✓	<i>f</i> x =0	LARead(B1,I	82,"Amo	unt","Varianc	e","Unit	ted States"	,"Sales","To	tal Qu	arter")				
	А	В	с	D	E	F	G	Н	1	J	к	L	м	1	4	
1	Database:	USING_O	LATION PXI	_												_
2	Cube:	SALES														
з	Dimensio	Filter	SALES Me	Members	Amount											
4		Filter	Version	Members	Variance											
5		Filter	Region	Members	World 📐											
б		Column	Account	Range	\$B\$10:\$											
7		Row	Month	Range	\$A\$11:\$ <mark>A\$</mark> .											
8																
9	OLAPivotT	able														
10		Sales	Margin	Cost of Sa	Margin Pcn	t 🔪										
11	Total Quai	-1240519	-1048359	-192160	0.845097		Q	uarter")								
12	January	-8131	10512	-18643	-1.29283											
13	1st Quarte	-1243624	-1035570	-208054	0.832703		Function Argu	uments						?	×	
14	February	460	187187	-186727	406.9283											
15	March	-1235953	-1233269		0.997828		OLARe									
16	April	3648	1948	1700	0.533991		Member	"Amount		1	= "A	mount"			^	
17	2nd Quart				0.524308		Member2	/ariano	e"	1	] = "V	ariance"				
	May	3847			0.513907		Member3	United :	States"	1	] = "U	nited States"				
	June	3962			0.525492		Member4	"Sales"		1	= "S	ales"				
	July	3967					Member5	'Total Qu	lanter"	Ť	і = т	otal Quarter"			v	
	3rd Quarte			7444				- rocar de		_						
	August	3823			0.206382		No help availal	hla			= 16	491				Ŀ
	Septembe				0.630901			Die.		_						Ŀ
	October	-5038			1.198491				Member	5						Ŀ
	4th Quarte				1.136568											Ŀ
	Novembe	-8944			1.111807											ŀ
	Decembei	-7985	-8985	1000	1.125235		Formula result	= 16491								ŀ
28							Help on this fu	inction					ОК	Can	cel	ŀ
29														_		

Click OK in the Functions Arguments window, then hit F9 to update the worksheet. The figure 164911—which is the precise data point described by the OLARead function--appears in the cell, as shown in the following image (labeled and highlighted green, to compare to the *World* figure for the same other Member details, highlighted yellow).

1	Database:	USING_OL	ATION PXL	-					
2	Cube:	SALES							
3	Dimensio	Filter	SALES Me	Members	Amount				
4		Filter	Version	Members	Variance				
5		Filter	Region	Members	World				
6		Column	Account	Range	\$B\$10:\$E\$	10			
7		Row	Month	Range	\$A\$11:\$A\$	27			
8									
9	OLAPivot1	Table					U	nited State	95
10		Sales	Margin	Cost of Sa	Margin Pc	nt	Sales, Var	iance, Tota	l Quarters
11	Total Qua	-1240519	-1048359	-192160	0.845097			16491	
12	lanuarv	-8131	10512	-18643	-1.29283				

#### Example2: (OLAReadWrite vs OLARead)

Next we will compare how PowerExcel's OLAReadWrite (described in the following sections) works vs an **OLARead** Function.

• Create a PowerExcel DB Functions Slice with the orientation of your choosing (e.g., the following image will serve as an example).



H2	22			<b>•</b>	$\times \checkmark f_x$							
	А	в	с	D	E	F	G	Н	1	J	к	[
1		USING_OLATION										1
2	Cube:	SALES										1
3	Dimensions:	Filter	SALES Measure	Members	Amount							1
4		Filter	Version	Members	Budget							1
5		Filter	Region	Members	Mexico							1
6		Column	Account	Range	\$B\$10:\$D\$10							1
7		Row	Month	Range	\$A\$11:\$A\$18							1
8												
9		OL	AReadWrite									
10		Sales	Cost of Sales	Margin								
11	January	10000	8888	1112								
12	February	20000	9999	10001								
13	March	0	0	0								
14	1st Quarter	30000	18887	11113								
15	April	0	0	0								
16	May	0	0	0								
17	June	0	0	0								
	2nd Quarter	0	0	0								
19												_
20												_
21												-
22								L,				-
23												-
24												-
25												-
~	• • • • • • • • • • • • • • • • • • •	Sheet1 (+)			· · · · · ·	:	4	·			· ·	1

**Note:** We placed a heading (in Row 9), "OLAReadWrite", at the top of the sample table so we can identify that the cells below are governed by this type of formula.

• Note that in a DB Functions Slice, each cell contains an individual formula, as in the following image (Cell B11 has been clicked on). As we will see, an **OLARead Formula function** also appertains to an individual cell.

A١	/ERAGE			<b>•</b> :	$X \checkmark f_x$	=@ \$A1	OLAReadWri .1)	ite(\$ <mark>B\$1,\$</mark>	8 <mark>\$2</mark> ,\$E\$3, <b>\$</b> E	5\$4,\$E\$5, <b>B</b>	\$10, <b>^</b>
	А	В	с	D	E	F	G	н	I	J	К
	Database:	USING OLATION							22222	LAReady	
2	Cube:	SALES									
3	Dimensions:	Filter	SALES Measure	Members	Amount						
4		Filter	Version	Members	Budget						
5		Filter	Region	Members	Mexico						
6		Column	Account	Range	\$B\$10:\$D\$10						
7		Row	Month	Range	\$A\$11:\$A\$18						
8											
9			AReadWrite				OLAREAD				
10		Sales	Cost of Sales	Margin			Sales				
	January	B\$10,\$A11)	8888	1112			10000				
	February	20000	9999	10001			20000				
	March	0	0				0				
	1st Quarter	30000	18887	11113							
	April	0	0	0							
	May	0	0	-							
	June	0	0								
	2nd Quarter	0	0	0							
19											
20											

• Next to create an **OLARead** formula: in Cells **G10**, **H10** and **I10** and type, respectively, *Sales, Cost of Sales* and *Margin* (make sure to put a **single quote** at the beginning of each). In the screenshot, **OLARead** has been typed above and highlighted in blue.

G	11			•	× ~ f;	ĸ					
	А	В	с	D	E	F	G	н	1	J	к
1	Database:	USING_OLATION									
2	Cube:	SALES									
3	Dimensions:	Filter	SALES Measure	Members	Amount						
4		Filter	Version	Members	Budget						
5		Filter	Region	Members							
б		Column	Account	Range	\$B\$10:\$D\$10						
7		Row	Month	Range	\$A\$11:\$A\$18						
8											
9		01	AReadWrite					OLAREAD			
10		Sales	Cost of Sales	Margin			Sales	Cost of Sales	Margin		
11	January	10000	8888	1112							
	February	20000	9999	10001							
	March	0									
	1st Quarter	30000	18887	11113							
	April	0	0								
	May	0	-								
	June	0									
	2nd Quarter	0	0	0							
19											
20											
21											
22											

• Define the **OLARead** formula: in Cell **G11** click the **Function** button beside the formula bar. In the Insert Function dialog that appears, choose **PowerExcel.ExcelFunctions** as the category, select **OLARead** from the function list and click **OK**.

- In the Function Arguments dialog box, define the parameters:
  - Click on Connection field and then click on cell B1 (which is the cell reference for USING_OLATION database). Use an Absolute reference so the connection reference appears as \$B\$1.
  - Click on the Cube field then click on cell B2 (the cell reference for the *SALES* cube) Again, use absolute an reference, thus **\$B\$2**.
  - Click on the Member 1 field, then click on cell **E3** (the cell reference for the Filter Member *Amount* in the *SALES Measure* Dimension).
  - Click on the Member 2 field then click on cell **E4** (the cell reference for the Filter Member *Budget* in the *Version* Dimension).
  - Click on the Member 3 field then click on cell **E5** (the cell reference for the Filter Member *Mexico* in the *Region* Dimension).
  - Click on the Member 4 field, then click on cell G10 (the cell reference for the Column Member Sales of the Account Dimension); use the absolute row reference, thus G\$10.
  - Click on the Member 5 field, then click on cell A11 (the cell reference for the Row Member *January* in the *Month* Dimension); use the absolute column reference, so the Member 5 reference \$A11.

**Note:** Notice that the corresponding Database, Cube and Member names appears in each corresponding field, as shown in the following image.

A         B         C         D         E         F         G         H         I         J         K         L         M           1         Database:         USING_OLATION	AV	'ERAGE			▼ :	×	OLA_Ve	rsion_c007a	a04 d24134 d d	39940e1dce9	8b638aa768f745a2 bb5189, lb3a0,G\$10,\$A11)	29 d06483	37d05abo	dc1,	^	
1       Delabase:       USINC_OLATION       Image of the second of the		А	В	с	D	E	F	G	н	1	J	к	L	м		1
8       Dimensions: Filter       SALES Messure: Members Amount       Image: SALES Messure: Members Budget       Image: SALES Messure: SALES       Image:			USING OLATION						-					_		1
4       Filter       Version       Members       Budget       Image: Selis (SS)	2	Cube:	SALES													
S       Filter       Region       Members       Members <th< td=""><td>3</td><td>Dimensions:</td><td>Filter</td><td>SALES Measure</td><td>Members</td><td>Amount</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></th<>	3	Dimensions:	Filter	SALES Measure	Members	Amount										
6       Column       Account       Range       \$850:50:50:0       The Image below f         7       Row       Month       Range       \$451:54:18       Image below f       edited to show the parameters specifie         9       OLAREAD       Image below f       Edited to show the parameters specifie       Function Argument       Funct	4		Filter	Version	Members	Budget										
7       Row       Month       Range       SA\$11:\$4\$18       OLAREAD         8       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0 <t< td=""><td></td><td></td><td>Filter</td><td>Region</td><td>Members</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>			Filter	Region	Members											
8       0       0       Area       0       Area       0       Area       0       Area       0       Area       0       Area       Function Arguments       Function Arguments       Function Arguments       Function Arguments       7       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X       X			Column		Range											
9       OLAReadWrite       OLAREAD       Function Argument         10       Sales       Cost of Sales       Margin       Sales       Cost of Sales       Margin         12       January       10000       9888       1112       Sales       Cost of Sales       Margin       Image of Sales       Image of Sales       Image of Sales       Margin       Image of Sales			Row	Month	Range	\$A\$11:\$A\$18										
10       Sales       Cost of Sales       Margin         11       January       10000       8888       1112         2       February       20000       9999       10001         3       March       0       0       0         13       March       0       0       0         14       Ist Quarter       30000       18887       11113         15       April       0       0       0         17       June       0       0       0         18       ard Quarter       0       0       0         19       0       0       0       0         20       0       0       0       0         21       0       0       0       0         22       0       0       0       0         23       0       0       0       0         24       0       0       0       0         25       0       0       0       0         26       0       0       0       0         27       0       0       0       0         28       0       0												p				
11       January       10000       8888       1112       \$411)         12       February       20000       9999       10001         13       March       0       0       0         14       Ist Quarter       30000       11113       Concertion       5851       =       "SALES"         15       April       0       0       0       0       Concertion       5851       =       "SALES"         18       2nd Quarter       0       0       0       0       Concertion       5851       =       "SALES"         19													Functi	on Argu	iments	dialog
12       February       20000       9999       10001         13       March       0       0       0         14       1st Quarter       30000       18887       11113         15       April       0       0       0         16       May       0       0       0         17       June       0       0       0         18       2nd Quarter       0       0       0         19       0       0       0       0         20       0       0       0       0         21       0       0       0       0         22       0       0       0       0         23       0       0       0       0         24       0       0       0       0         25       0       0       0       0       0         26       0       0       0       0       0         28       0       0       0       0       0         30       0       0       0       0       0         30       0       0       0       0       0		lonuonu							Cost of Sale	≥s Margin						
13       March       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0 <td>_</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>ŞA</td> <td>11)</td> <td>4</td> <td></td> <td></td> <td></td> <td>+ 1</td> <td></td> <td></td> <td></td>	_						ŞA	11)	4				+ 1			
Id       1st Quarter       30000       11113       Function Arguments       Image: Consection of the synthesis of the synthesynthesis of the synthesis of the synthesynt														_	_	
15       April       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0 <td>_</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>Function Ar</td> <td>guments</td> <td></td> <td></td> <td></td> <td></td> <td>? &gt;</td> <td>×</td> <td></td> <td></td>	_						Function Ar	guments					? >	×		
16       May       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0	-						OLARead									
17       June       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0 <td>_</td> <td></td> <td>0</td> <td>C</td> <td>) 0</td> <td></td> <td>Connection</td> <td>n \$8\$1</td> <td></td> <td><u>†</u> =</td> <td>"USING_OLATION"</td> <td></td> <td></td> <td>~  </td> <td></td> <td></td>	_		0	C	) 0		Connection	n \$8\$1		<u>†</u> =	"USING_OLATION"			~		
18       2nd Quarter       0       0       0       Memberi       OLA_SALES_Measure_8b638a37. ★ = "Amount"       Image: Sale in the sale in			0	0	) 0		Cub	e \$8\$2		<u>+</u> -	"SALES"					
19       Image: Control of	18	2nd Quarter	0	C	) 0				S Measure 8h		"Amount"					
20       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0       0	19															
21       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1       1									-		-					
23     Image: Constraint of the constrai							Member	ULA_REGI	011_0060191002				`	~		
24     1     1     Image: Section Agaments       25     1     1     1       26     1     1     1       27     1     1     1       28     1     1     1       29     1     1     1       30     1     1     1       1     1     1     1       1     1     1     1       1     1     1     1							No help avai	lable		-	10000					
25     0LARead       26     0LARead       27     0       28     0       29     0       30     0         31     1         32         33         34         35         36         37         38         39         30         31         32         33         34         35         36         37         38         39         39         30         30         30         31         32         32         33         34         35         36         37         38         39         39         30         31         32         33         34         35         36							No help avai	iabic.		Function Arg	uments					?
26     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1<									Member3	OLARead						
27     28     29     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20     20											OLA Version (707a	04/24134	Idd 🕈 🔹	= "Budget		
28     29     30     30     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1							Formula roci	ut - 10000								
29     Image: Salid structure       30     Image: Salid structure       31     Image: Salid structure       32     Image: Salid structure       33     Image: Salid structure       34     Image: Salid structure       35     Image: Salid structure       36     Image: Salid structure       37     Image: Salid structure       38     Image: Salid structure       39     Image: Salid structure       30     Ima	_											510022043				
30     30     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1     1							Help on this	function								
No help available. = 10000 No help available.											\$A11			= January		
No help available. Member6										Member6	I		1 ·	-		
Formula result = 10000										No help availa		er6	-	= 10000		
Help on this function																ОК Са

• Click **OK**. Then click the **Refresh** button along the PowerExcel Tab of the Excel ribbon. Notice that the formula returns the value **10000**: it returns the same value as in OLAReadWrite section of the Slice (Cell B11).

G1	.1			• :	$\times \checkmark f_s$	OLA	ARead(\$B\$1,\$B\$ _Version_c007al _Region_d8ebf\$	04d24134dd39	940e1dce9bb51	89,		7d05abdc1,	^
	А	В	С	D	E	F	G	н	1	J	К	L	
1	Database:	USING_OLATION											
2	Cube:	SALES											
3	Dimensions:	Filter	SALES Measure	Members	Amount								
4		Filter	Version	Members	Budget								
5		Filter	Region	Members	Mexico								
б		Column	Account	Range	\$B\$10:\$D\$10								
7		Row	Month	Range	\$A\$11:\$A\$18								
8													
9		OL	AReadWrite					OLAREAD					
10		Sales	Cost of Sales	Margin			Sales	Cost of Sales	Margin				
11	January	10000	8888	1112			10000						
12	February	20000	9999	10001									
13	March	0	0	0									
	1st Quarter	30000	18887	11113									
	April	0	0	0									
	May	0	0	0									
	June	0	0	0									
	2nd Quarter	0	0	0									
19													
20													

• Now, click on the returned value of the **OLARead** formula of **10000** (cell G11), then click on the formula bar (notice that the cursor is at the end of the formula). This will show the corresponding cell references of the formula.

A١	/ERAGE			• :	$\times \checkmark f_x$		ARead( <mark>\$B\$1,\$</mark> B				a29d064831	7d05abdc1,	^
							_Version_c007a _Region_d8ebf				.)		
	А	В	С	D	E	F	G	н	I.	J	К	L	
1	Database:	USING_OLATION											
2	Cube:	SALES											
3	Dimensions:	Filter	SALES Measure	Members	Amount								
4		Filter	Version	Members	Budget								
5		Filter	Region	Members	Mexico								
б		Column	Account	Range	\$B\$10:\$D\$10								
7		Row	Month	Range	\$A\$11:\$A\$18								
8													
9		OL	AReadWrite					OLAREAD					
10		Sales	Cost of Sales	Margin			Sales	Cost of Sales	Margin				
11	January	10000	8888	1112			\$A11)	<u> </u>					
12	February	20000	9999	10001									
13	March	0	0	0									
	1st Quarter	30000	18887	11113									
15	April	0	0	0									
	May	0	0	0									
17	June	0	0	0									
18	2nd Quarter	0	0	0									
19													
20													
21													

Function Argu	iments						?	Х	]		
-	enco							~			
OLARead											
Connection	\$B\$1		Ť	= "USING_OL	ATION"			^			
Cube	\$B\$2		1	= "SALES"							
Member 1	OLA_S/	ALES_Measure_8	b638aa7i 🛨	= "Amount"							
Member2	OLA_V	Europhian Augu								?	×
Member3	OLA_R	Function Argu	iments						1	ſ	^
		OLARead									
No help availat	ole.	Member2	OLA_Version_	_c007a04d24134	dd 🛨	=	"Budget"				^
		Member3	OLA_Region_	d8ebf9f8822849	4C 🛨	=	"Mexico"				
		Member4	G\$10		Ţ	=	"Sales"				
		Member5	\$A11		<u>↑</u>	=	"January"				
Formula result	=	Member6			Ţ	=					~
Help on this fu	nction					=					
		No help availat	ole.								
			ı	Member2							
		Formula result	=								
		Help on this fu	nction					OK	:	Cano	el

### **Cell References:**

=OLARead(\$B\$1,\$B\$2,OLA_SALES_Measure_8b638aa768f745a29d064837d0 5abdc1,OLA_Version_c007a04d24134dd39940e1dce9bb5189,OLA_Region_d8e bf9f882284940a8dc5a4f0a00b3a0,G\$10,\$A11)

- \$B\$1- the Database name or the PowerExcel connection name/cell reference that contains the name of the Database or the PowerExcel connection, i.e., USING_OLATION
- \$B\$2 the Cube in the Database, i.e., SALES Cube
- OLA_SALES_Measure_8b638aa768f745a29d064837d05abdc1 the *Amount* Member in the *SALES Measure* Dimension [Filter reference]
- OLA_Version_c007a04d24134dd39940e1dce9bb5189 the *Budget* Member in the *Version* Dimension [Filter reference]
- OLA_Region_d8ebf9f882284940a8dc5a4f0a00b3a0 the *Mexico* Member in the *Region* Dimension [Filter reference]
- G\$10 the Column Member reference Sales from the Account Dimension [Column reference].
- \$A11 the Row Member reference January from the Month Dimension [Row reference].

• Copy the formula across and down to Cell **I18**. Click the **Refresh** button along the PowerExcel Tab. Notice that all cells return the same data values as in the PowerExcel ReadWrite section of the Slice.

G1	11			<b>▼</b> :	× √ fx	OL4	_Version_c007	a04d24134dd39	Measure_8b638 940e1dce9bb51 dc5a4f0a00b3a0	B9,		7d05abdc1	., ·
	А	В	с	D	E	F	G	Н	1	J	к	L	[
1	Database:	USING_OLATION											
2	Cube:	SALES											
3	Dimensions:	Filter	SALES Measure	Members	Amount								
4		Filter	Version	Members	Budget								
5		Filter	Region	Members	Mexico								
6		Column	Account		\$B\$10:\$D\$10								
7		Row	Month	Range	\$A\$11:\$A\$18								
8													
9		OL	AReadWrite					OLAREAD					
10		Sales	Cost of Sales	Margin			Sales	Cost of Sales	Margin				
11	January	10000	8888	1112			10000	0 8888	3 1112				
	February	20000	9999	10001			20000	9999	9 10001				
13	March	0	0	0			0	0 0	) 0				
	1st Quarter	30000	18887	11113			30000	18887	7 11113				
	April	0	0	0			0	) (	) 0				
	May	0	0	-				) (	) 0				
	June	0	0				0		) 0				
	2nd Quarter	0	0	0			(	) (	) 0				
19													
20													
21													

 Next in Cell B13 of the DB Functions Slice enter a new sales value—e.g., 30000. Press Enter then hit the Refresh button along the PowerExcel Tab of the Excel ribbon. Notice that the aggregate values are subsequently updated in both the OLARead and the ReadWrite sections of the Slice.

G1	.3			• :	$\times \checkmark f_s$	OLA	ARead(\$B\$1,\$B\$ _∨ersion_c007a _Region_d8ebf	04d24134dd399	40e1dce9bb518	39,		'd05abdc1,	Â
	А	В	с	D	E	F	G	н	I.	J	К	L	
1	Database:	USING_OLATION											
2	Cube:	SALES											
3	Dimensions:	Filter	SALES Measure	Members	Amount								
4		Filter	Version	Members	Budget								
5		Filter	Region	Members	Mexico								
б		Column	Account	Range	\$B\$10:\$D\$10								
7		Row	Month	Range	\$A\$11:\$A\$18								
8													
9		OL	AReadWrite					OLAREAD					
10		Sales	Cost of Sales	Margin			Sales	Cost of Sales	Margin				
11	January	10000	8888	1112			10000	8888	1112				
	February	20000	9999	10001			20000	9999	10001				
13	March	30000	0	30000			30000	0	30000				
14	1st Quarter	60000	18887	41113			60000	18887	41113				
	April	0	0	-			0		0				
	May	0	0	-			0		0				
	June	0	0				0		0				
	2nd Quarter	0	0	0			0	0	0				
19													
20													

Now try entering in the Read Slice (OLARead Slice) and observe the results. For example, in Cell H13 enter a new Cost of Sales value—e.g., 7777. This cell corresponds to the Budget, Cost of Sales value for the month of March and for the region Mexico. Press Enter then click the Refresh button.

H1	13			<b>*</b> :	×	7777					
	А	В	с	D	E	F	G	Н	I	J	к
1	Database:	USING OLATION									
2	Cube:	SALES									
3	Dimensions:	Filter	SALES Measure	Members	Amount						
4		Filter	Version	Members	Budget						
5		Filter	Region	Members	Mexico						
б		Column	Account	Range	\$B\$10:\$D\$10						
7		Row	Month	Range	\$A\$11:\$A\$18						
8											
9		OL	AReadWrite					OLAREAD			
10		Sales	Cost of Sales	Margin			Sales	Cost of Sales	Margin		
11	January	10000	8888	1112			10000	8888	1112		
12	February	20000	9999	10001			20000	9999	10001		
13	March	30000	0	30000			30000	7777	30000		
	1st Quarter	60000	18887				60000	18887			
	April	0	0				0	0			
	May	0	0	-			0	0			
	June	0	0				0	0			
	2nd Quarter	0	0	0			0	0	0		
19											
20											

- Notice that although you can see 7777 appear on Cell H13, that value did not appear in the same intersection of the ReadWrite section of the Slice (Cell **C13**). This means that the newly entered *Cost of Sales* value is not committed/saved to the source/target database.
- Additionally, clicking on Cell H13, notice that the **OLARead** formula was overwritten and replaced with the numeric value of 7777. (It is worth noting: in the ReadWrite section of the Slice, however, typing a number on a Detail intersections will not remove the OLAReadWrite function.)
- Next, to move the OLARead formula to a different cell: for example, move the March Sales Read formula (cell **G13**) to a different cell—e.g., Cell **K13**. Although the formula was moved, the cell references remained the same (which is standard Excel behavior).



К1	.3			▼ :	$\times \checkmark f_x$	OLA	ARead(\$B\$1,\$B\$ _Version_c007a _Region_d8ebf	04d24134dd399	40e1dce9bb518	19,		d05abdc1,
	А	В	С	D	E	F	G	н	I	J	K	L
1	Database:	USING_OLATION										
2	Cube:	SALES										
3	Dimensions:	Filter	SALES Measure	Members	Amount							
4		Filter	Version	Members	Budget							
5		Filter	Region	Members	Mexico							
б		Column	Account	Range	\$B\$10:\$D\$10							
7		Row	Month	Range	\$A\$11:\$A\$18							
8												
9		OL	AReadWrite					OLAREAD				
10		Sales	Cost of Sales	Margin			Sales	Cost of Sales	Margin			
11	January	10000	8888	1112			10000	8888	1112			
12	February	20000	9999	10001			20000	9999	10001			
13	March	30000	0	30000				7777	30000		30000	
14	1st Quarter	60000	18887	41113			60000	18887	41113			
15	April	0	0	0			0	0	0			
16	May	0	0	0			0	0	0			
17	June	0	0	0			0	0	0			
18	2nd Quarter	0	0	0			0	0	0			
19												
20												

Back in the ReadWrite section of the Slice, change the March Sales value at cell B13 to 50000. Press Enter then click the Refresh: the new value from the DB Functions Slice is reflected at the same intersection point that is using the OLARead formula function (Cell K13).

К1	.3			▼ :	$\times \checkmark f_x$	OL	ARead(\$B\$1,\$B _Version_c007a _Region_d8ebf	04d24134dd399	40e1dce9bb518	9,		105abc
	А	В	с	D	E	F	G	н	I	J	К	L
1	Database:	USING_OLATION										
2	Cube:	SALES										
3	Dimensions:	Filter	SALES Measure	Members	Amount							
4		Filter	Version	Members	Budget							
5		Filter	Region	Members	Mexico							
б		Column	Account	Range	\$B\$10:\$D\$10							
7		Row	Month	Range	\$A\$11:\$A\$18							
8												
9		0	LAReadWrite					OLAREAD				
10		Sales	Cost of Sales	Margin			Sales	Cost of Sales	Margin			
11	January	10000	8888	1112			10000	8888	1112			
12	February	20000	9999	10001			20000	9999	10001			
13	March	50000	) 0	50000				7777	50000		50000	
14	1st Quarter	80000	18887	61113			80000	18887	61113		<b>+</b>	
15	April	(	) 0	0			0	0	0			
	May	(	) 0	0			0	0	0			
	June		0				0	0	0			
	2nd Quarter	0	) 0					n	0			
9 20					Notice that the value is returned to the same intersection of the Read Slice (OLARead formula							

# 15.OLAReadWrite

**Function Description:** PowerExcel's Read/Write Formulas, when used as the means to bring data into a Slice, has the key advantage of returning business-model data (according to Dimensions selected and filtered) via <u>individual</u>, <u>discrete cell-by-cell functions</u>. In other words, each cell's value is governed by its own function (an OLAReadWrite function), rather than as part of a swath of cells, which is the case when the OLAPivotTable or the OLAPowerQuery functions are used.

## **Syntax:** OLAReadWrite (Connection, Cube, Member1, Member2,...,MemberN)

Connection: Enter the PowerExcel connection which contains the information about the Olation server URL and the source database name.

Cube: Enter the name of the source/target Cube; or enter the cell reference that contains the name of the source or target Cube you wish to establish connection to.

Member1 to MemberN: The related Member references.

### **Remarks:**

- The PowerExcel Connection must exist.
- The Olation Web Service must be running.
- The Database must be opened and running on the specified server.
- The 'Connection', 'Cube' and 'Member' parameters are compulsory.

### Example 1:

The function in this cell (reproduced below) has unique cell references; if you click in any other cell that returns values, you will see that the cell references are indeed different.

Function Argu	iments			?	×	
OLAReadWrit	e					
Connection	\$B\$1	<u>+</u> =	"PowerExcel PandA Training"		^	
Cube	\$B\$2	<u>+</u> =	"Month Year Financial Data"		- 7	
Member 1	\$E\$3	<u>+</u> =	"Amount"			
Member2	\$E\$4	<u>+</u> =	"Actual"			
Member3	\$E\$5	<u>+</u> =	"Sample Co"		~	
		=	"Calculating"			
No help availat		Function Arg	uments			? ×
	Connection		:e			
		Member4	\$E\$6	Ţ	- [	"Product 1"
Formula result	= Calculating	Member5	\$E\$7	Ţ	=	"Online Sales"
Help on this fu	unction	Member6	B\$12	Ţ	- [	"Jan 2019"
	medon	Member7	\$A13	Ţ	- [	"All"
		Member8		1	- [	~
					=	"Calculating"
		No help availa	ble.			
			Member4			
		Formula result	:= Calculating			
		Help on this fu	-			OK Cancel
		ricip on onbit				Cancer

#### **Cell References:**

=OLAReadWrite(\$B\$1,\$B\$2,\$E\$3,\$E\$4,\$E\$5,\$E\$6,\$E\$7,B\$12,\$A13)

The **Read/Write Formula** function points to—and returns the value from—a precise multidimensional data point in the PowerExcel model: thus, the formula in Cell G13 is returning a value from the intersection of (in this example):

- \$B\$1 the Database where the model is located, i.e., PowerExcel PandA Training
- \$B\$2 the Cube in the Database, i.e., Month Year Financial Data
- \$E\$3 the Amount Member in the MY Fin Data Measure Dimension
- \$E\$4 the Actual Member in the Version Dimension
- \$E\$5 the Sample Co Member in the Entity Dimension
- \$E\$6 the *Product 1* Member in the *Product* Services Dimension
- \$E\$7 the Online Sales Member in the Department Dimension
- o B\$12 Jan 2019 from the Month Year Dimension [Column reference]
- \$A13 All from the Account Dimension [Row reference]

The interesting—and very important—fact is that that these cells are themselves "selectable"—meaning that either by using the PowerExcel pane to the right or by double-click on, for example, those governed by an {OLATableMember...} function, you can select a different Member that will change all results in the field of data in Columns and Rows.

### Example 2:

• As an example, you can double-click in Cell \$E\$4, and make a selection of a different version: if you do so and pick "Budget" (from the resulting PowerExcel Select Members window, as shown in the below image), then results for all the Members, including those in Columns and Rows, will show results for *Budget* rather than *Actual*.

- ×	$\checkmark f_x$	{=OLATab	leMember(\$	B\$1,\$B\$2,"Filter",0,"Version","Actual")}
В	с	D	E	Select Members
PowerEx	cel PandA T	raining		Members Hierarchy
Month Ye	ear Financia	l Data		
Filter	MY Fin Da	Members	Amount	↓ 🛨 - 🗸 🕹 🕹 - 🕹 - 🗸 - 🗸 - 🕹 - ↓ - ↓ - ↓ - ↓ - ↓ - ↓ - ↓ - ↓ - ↓ -
Filter	Version	Members	Actual	# All
Filter	Entity	Members	Sample Co	# Actual vs Budget
Filter	Product -	Members	Product 1	# Actual vs Forecast # Budget
Filter	Departme	Members	Online Sales	
Column	Month Ye	Range	\$B\$12:\$G\$12	
Row	Account	Range	\$A\$13:\$A\$56	

For present, go back to (or keep the selection at) Actual. We will proceed what this "cell-by-cell return of values" enables us to do in the following steps.

- First delete Row 13, which shows data for the All Account Member—this is a formatting step, to show our data results more cleverly.
- Next, after the Rows have shifted upward 1 Row, click in Cell C13—*Feb 2019*, *Sales Income*.
- Highlight all cells across and down to G15 (Jun 2019, INCOME); "grab" those cells and drop them starting in Cell I13—the result will show as in the following image:

	A	В	С	D	E	F	G	н	1	J	К	L	м
1	Database:	PowerExc	el PandA T	raining									
2	Cube:	Month Ye	ar Financia	l Data									
3	Dimensions:	Filter	MY Fin Da	Members	Amount								
4		Filter	Version	Members	Actual								
5		Filter	Entity	Members	Sample C	5							
6		Filter	Product - !	Members	Product 1								
7		Filter	Departme	Members	Online Sa	les							
8		Column	Month Ye	Range	\$B\$12:\$G	312							
9		Row	Account	Range	\$A\$13;\$A	56							
10				_									
11													
12		Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019						
13	Sales Income	9250							8750	12000	9000	7500	6500
14	Product Licensi	1850							1750	2400	1800	1500	1300
15	INCOME	11100							10500	14400	10800	9000	7800
16	DirectCosts	3515	3325	4560	3420	2850	2470						

If you now double-click on Cell E4 and select *Budget*, then hit F9 to update—note, those cells that you moved to the right show all zeros (as in the next image)! That is because Excel maintained the references to the cells, and the selected Member in them, in their new position—and the *Budget* values for all parameters happen to be zero. In essence, you have proved that with PowerExcel, you can return values from a business model wherever you like, anywhere in a spreadsheet. This is enormously

# useful in creating precisely the report view you wish, from a multidimensional model of the sort PowerExcel features.

	A	В	С	D	E	F	G	н		J	К	L	м
1	Database:	PowerExc	el PandA T	Fraining									
2	Cube:	Month Ye	ar Financia	al Data									
3	Dimensions:	Filter	MY Fin Da	r Members	Amount								
4		Filter	Version	Members	Budget								
5		Filter	Entity	Members	Sample C	)							
б		Filter	Product -	Members	Product 1								
7		Filter	Departme	Members	Online Sa	les							
8		Column	Month Ye	Range	\$B\$12:\$G	512							
9		Row	Account	Range	\$A\$13:\$A	\$55							
10													
11													
12		Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019						
13	Sales Income	0							0	0	0	0	0
14	Product Licensi	0							0	0	0	0	0
15	INCOME	0							0	0	0	0	0
16	DirectCosts	0	0	0	0	0	0						

• For present purposes, revert back to the *Actual* Member (double-click on Cell E4, select *Budget*, etc.).

Next, highlight Cells B13 to B15 (*Jan 2019, Sales Income* to *Jan 2019, INCOME*); click on the dot at the bottom right of Cell B15 and "drag" the highlight across to Column G.

• When you hit **F9 to update**—you will see the that the data is the same as the date to the right, which you moved a few steps ago. Here Excel, as is its custom, ensured that what shows in Columns is the sequence (following *Jan 2020*) of *Feb 2020*, *Mar 2020*, etc., out to Column G, *Jun 2019*. (This is a fine example of Excel working the way a user expected!)

	Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019					
Sales Income	9250	8750	12000	9000	7500	6500	8750	12000	9000	7500	6500
Product Licensi	1850	1750	2400	1800	1500	1300	1750	2400	1800	1500	1300
INCOME	11100	10500	14400	10800	9000	7800	10500	14400	10800	9000	7800

• This next step involves some housekeeping/formatting, which are always important in data presentation, and which here is necessary to arrive are our objective, which is to show *Budget* numbers to the right of the data showing *Actuals*:

Copy the cells C12 to G12 (*Feb 2019* to Jun *2019*) and paste them into cell I12, and make those month headers **bold**.

Then, type the word **Budget** into Cell I11, making it **bold** as well.

• Next, to change the key reference for the right "block" of cells, so that they show Budget figures:

Click in Cell I13, then click within the function in the formula bar.

Change the reference to *Actual* (**\$E\$4**) by highlighting it and pointing to Cell I11 (you can do this by pull the rectangle surrounding E4 down to I11).

Before you press F9 to recalculate, your spreadsheet will look as follows:

SU	SUM 🔹 🗄 🗙 🖌 🖆 =OLAReadWrite(\$B\$1,\$B\$2,\$E\$3,\$I\$11,\$E\$5, <b>\$E\$6</b> ,\$E\$7,C\$12,\$A13)												
	А	в	с	D	E	F	G	н	I	L	к	L	м
1	Database:	PowerExc	el PandA T	raining									
2	Cube:	Month Ye	r Financia	l Data									
3	Dimensions:	Filter	MY Fin Da	Members	Amount								
4		Filter	Version	Members	Actual								
5		Filter	Entity	Members	Sample Co								
6		Filter	Product -	Members	Product 1								
7		Filter	Departme	Members	Online Sa	es							
8		Column	Month Ye	Range	\$B\$12:\$G\$	512							
9		Row	Account	Range	\$A\$13;\$A\$	55							
10													
11									Budget				
12		Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019		Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
13	Sales Income	9250	8750	12000	9000	7500	6500		=OLARea	12000	9000	7500	6500
14	Product Licensi	1850	1750	2400	1800	1500	1300		1750	2400	1800	1500	1300
15	INCOME	11100	10500	14400	10800	9000	7800		10500	14400	10800	9000	7800

• Hit the **Enter** key and then press **F9**—note that the value changes to zero (as per the arrow in the following image)! As we saw earlier, there is indeed a zero value for *Budget, Sales Income* for *Feb 2019* (for Amount, Sample Co, Product 1, Online Sales—i.e., the other referenced cells.)

Budget				
Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
0	12000	9000	7500	6500
1750	2400	1800	1500	1300
10500	14400	10800	9000	7800

Once again put your cursor in Cell **I13**; use dot at the bottom right and pull down to include I14 and I15; hit Enter and then F9 to update. These cells also show zero values. Lastly, highlight I13 through I15 and, as above, pull the highlighted area across, covering all of the data set through to Column M. Hit Enter and F9. The result set will show as in the following image.

	A	В	С	D	E	F	G	Н	I	J	K	L	M
1	Database:	PowerExc	el PandA 1	raining									
2	Cube:	Month Ye	ar Financia	al Data									
3	Dimensions:	Filter	MY Fin Da	Members	Amount								
4		Filter	Version	Members	Actual								
5		Filter	Entity	Members	Sample Co	)							
6		Filter	Product -	Members	Product 1								
7		Filter	Departme	Members	Online Sa	es							
8		Column	Month Ye	Range	\$B\$12;\$G\$	12							
9		Row	Account	Range	\$A\$13:\$A\$	55							
10													
11									Budget				
12		Jan 2019	Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019		Feb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019
13	Sales Income	9250	8750	12000	9000	7500	6500		0	0	0	0	C
14	Product Licensi	1850	1750	2400	1800	1500	1300		0	0	0	0	C
15	INCOME	11100	10500	14400	10800	9000	7800		0	0	0	0	0
	let te t	0545	0005	45.00	0.100	0050	0.070						

As a final part of this exercise, we will do something that is covered more in depth in a later section: entering data into a PowerExcel model—here will type a couple of numbers into this spreadsheet, which will further demonstrate (and validate) the use of creating data sets in a spreadsheet by using the **OLAReadWrite** function.

• Type example numbers—e.g., 9999 and 2000—in Cells I13 and I14 (*Sales Income* and *Product Licensing Income*, for *Feb 2019*). In this way we might be entering future budget numbers (in actuality, the entry template would be for a "plan" period, not the current months), with full, and nearby, knowledge of ongoing Actuals. (The Actual figures appear in Cells C13 and C14—circle to the left in the next image.) Hit F9.

11								(	Budget	
12		Jan 2019 🛛	eb 2019	Mar 2019	Apr 2019	May 2019	Jun 2019		Feb 2019	Mar 2019
13	Sales Income	9250	8750	12000	9000	7500	6500		9999	0
14	Product Licensing Incom	e 1850	1750	2400	1800	1500	1300		2000	0
15	INCOME	11100	10500	14400	10800	9000	7800		11999	0
		1								

• As shown above on the right, the two Budget numbers appear and even calculate automatically, delivering the *INCOME* number for *Feb 2019*. This calculation, defined once in the PowerExcel model—rather than in numerous cells individually, in numerous spreadsheets—demonstrates another advantage of using PowerExcel for business modeling.

## 16.OLATableMember

**Function Description:** This function covers a 'cell range' or a 'group of cells' that define the Dimension Name and the corresponding Member/s that will be displayed along the Filter area of a PowerExcel Slice. The 'cell range' covered by this function must be updated simultaneously and changes will only be committed by use of the CTRL+SHIFT+ENTER keys.

To change the Display Members of a particular Dimension, click on all the cells covered by the OLATableMember function, change the last parameter and enter the exact name of the new Display Member then press **Ctrl+Shift+Enter** keys to commit the changes. Notice that the update is reflected across all the cells covered by the function.

#### Syntax: OLATableMember (Connection, Cube, AXIS, Index, Dimension, Member)

Connection: Enter the PowerExcel connection which contains the information about the Olation server URL and the source database name.

Cube: Enter the name of the source/target Cube; or enter the cell reference that contains the name of the source or target Cube you wish to establish connection to.

AXIS: This indicates the area of the PowerExcel Slice where the data will appear (i.e., Filter, Column or Rows)

#### Index: 0

[NOTE: When Filter is indicated, Index will always be "0", and changing this number will not change the value result in PowerExcel.]

Dimension: Enter the Dimension name or the cell reference that contains the name of the Dimension that exists within the specified Database above.

Member: Enter the Member name or the cell reference that contains the name of the preferred display Member along the Filter area of the specified Dimension.

#### **Remarks:**

- The PowerExcel Connection must exist.
- The Olation Web Service must be running.
- The Database must be opened and running on the specified server.
- The Cube must exist within the specified database.
- The Dimension must exist within the specified database.
- The Member must exist within the specified Dimension.
- All the parameters are compulsory since the function covers a 'range of cells'.
- It is imperative that 'All' cells governed by the OLATableMember function be updated in order to successfully commit the changes to the formula.

#### Example:

The example Slice below shows a PowerExcel Perspective Slice. The **OLATableMember** function is used to define the Members to display along the Filter area of the PowerExcel Slice. Additionally, the **OLATableMember** is a 'Range Reference', meaning it is a formula function that governs a group of cells. Hence, if you click on any cell containing the formula, you will notice that the formula is enclosed in 'Curly Brackets', an indication that this is a Range Reference: all cells covered by the same Range reference will render the same formula.

- As in the example screenshot below, the OLATableMember formulas can be found in the cells B3:E3 (SALES Measure Dimension with the filter Member Amount), B4:E4 (Version Dimension with the filter Member Variance) and B5:E5 (Region Dimension with the filter Member World).
- When you click on the cell containing the **OLATableMember** formula (as in the example, the active cell is **B4**) notice that the **OLATableMember** formula that appears in the formula bar is enclosed in curly brackets. When you click through the cells that are part of the cell range—**C4**, **D4** and **E4**—notice that they will show the same formula as that seen in cell B4:

				E		the whole form cating that thi			-				
B4	4		~	: × ✓	<i>f</i> ∝ {=OLATal	oleMember(\$B\$1,	\$B\$2,"Filt	er",0,"∨er	sion","Vari	iance")} 🔫			v
	А	В	С	D	E	F	G	н	I	J	к	L	I E
1	Database:	USING_OLATION											
2	Cube:	SALES											
3	Dimensions:	Filter	SALES Measure	Members	Amount								
4		Filter	Version	Members	Variance								
5		Filter	Region	Members	World								
б		Column	Account	Range	\$B\$10:\$F\$10								
7		Row	Month	Range	\$A\$11:\$A\$28								
8													
9	OLAPivotTable												
10		All	Sales	Margin	Cost of Sales	Margin Pcnt							
11	All	50685.10857	55672	60663	-4991	1.089650093							
12	Total Quarter	50685.10857	55672	60663	-4991	1.089650093							
13	January	85431.04054	91995	98558	-6563	1.071340834							
14	1st Quarter	57846.00285	71924	86001	-14077	1.195720483							
15	February	-29822.49618	-21285	-12748	-8537	0.598919427							
	•• •	0007 450 405		101	4.000	0.457004407							

#### {=OLATableMember(\$B\$1,\$B\$2,"Filter",0,"Version","Variance")}

- By clicking in the formula bar area (in the next image, the mouse cursor is placed at the end of the formula), the cell references corresponding to the OLATableMember function will be outlined on the spreadsheet. The OLATableMember function returns Filter(B4), Version(C4), Members(D4) and Variance(E4)
- It is also referencing the Cube called "SALES" (\$B\$2) and is using the PowerExcel connection/OLADatabase connection called "USING_OLATION" (\$B\$1).
   Note: When you are on edit mode of a Range Reference type of formula, notice that the 'Curly Brackets' disappear. Click on Esc (Escape) to come out of the formula bar.

# Power**Excel**

A	VERAGE		•	: × 🗸	<i>f</i> ∗ =OLATał	oleMember(\$B\$1,	\$B\$2,"Filt	er",0,"Ver	sion","Vari	iance")			۲
	А	В	с	D	E	F	G	н	1	J	к	L	
1	Database:	USING_OLATION	l										
2	Cube:	SALES											
3	Dimensions:	Filter	SALES Measure	Members	Amount								
4		"Variance")	Version	Members	Variance								
5		Filter	Region	Members	World								
6		Column	Account	Range	\$B\$10:\$F\$10								
7		Row	Month	Range	\$A\$11:\$A\$28								
8													
9	OLAPivotTable												
10		All	Sales	Margin	Cost of Sales	Margin Pcnt							
11	All	50685.10857	55672	60663	-4991	1.089650093							
12	Total Quarter	50685.10857	55672	60663	-4991	1.089650093							
13	January	85431.04054	91995	98558	-6563	1.071340834							
14	1st Quarter	57846.00285	71924	86001	-14077	1.195720483							
15	February	-29822.49618	-21285	-12748	-8537	0.598919427							

Function Argu	uments						?	×	
OLATableMen	nber								
Connection	\$B\$1		1	= "USING_OLA	TION"			^	
Cube	\$B\$2		1	= "SALES"				L.	
AXIS	"Filter"	Function Arqu	mente						? (
Index	0	-							· · ·
Dimension	"Version"	OLATableMen	nber	= "Verdon"					
		Cube	\$B\$2		Ť	=	"SALES"		•
No help availal	ble.	AXIS	"Filter"		Ť	=	"Filter"		
		Index	0		1	=	0		
		Dimension	"Version"		Ť	=	"Version"		
		Member	"Variance"		Î	=	"Variance"		~
Formula result	= Filter					=	{"Filter", "Ve	ersion	", "Members", "Variai
Help on this fu	unction	No help availal	ole.						
				Cube					
		Formula result	= Filter						
		<u>Help on this fu</u>	inction						OK Cancel

#### **Cell References:**

=OLATableMember(\$B\$1,\$B\$2,"Filter",0,"Version","Variance")

- \$B\$1- the Database name or the PowerExcel connection name/cell reference that contains the name of the Database or the PowerExcel connection, i.e., USING_OLATION
- \$B\$2- the Cube name or the cell reference that contains the name of the Cube, i.e.,
   SALES
- o "Filter"- This indicate that the data will appear along the Filter area of the Slice
- "0" [Note: this is a constant when Filter is indicated, and there will be no change if another number is used]
- "Version"- the Dimension name that exists within the database placed along the Filter area of the Slice

 "Variance"- the Member name that exists within the specified Dimension that will serve as the Filter Member

As an example: assume that you know the Members that exist for the *Version* Dimension: *Variance, Actual* and *Budget*, illustrated in the image below.

Select Members		—	×
Members Hierarchy	$\supset \oslash \supset \supseteq \varkappa$	Q	8 🗸
↓2     ▼     ↓     Q       # Variance       # Actual       # Budget	# Variance		

Next, you want to change the current display or Filter Member (*Variance*) to *Actual*. Select all the cells governed by the OLATableMember formula for Version Dimension (B4:E4); then click on the formula bar and double-click on the Member parameter (the last parameter; in this example it is *Variance*). Next, type in the new filter Member, which is Actual (make sure that this is enclosed in double quotes). Press Ctrl+Shift+Enter keys to commit the formula change. Click the Refresh button along the PowerExcel Tab of the Excel ribbon, or press F9. The OLATableMember is now updated and the table shows the new fact data for *Actual*.

B4	L		Ţ	: × 🗸	<i>f</i> ∗ {=OLATak	oleMember(\$B\$1,	\$B\$2,"Filt	ter",0,"Ver	sion","Actua	d")}			~
	А	В	С	D	E	F	G	н		J	К	L	
1	Database:	USING_OLATION											
2	Cube:	SALES											
3	Dimensions:	Filter	SALES Measure	Members	Amount								
4		Filter	Version	Members	Actual								
5		Filter	Region	Members	World								
6		Column	Account	Range	\$B\$10:\$F\$10								
7		Row	Month	Range	\$A\$11:\$A\$28								
8													
9	OLAPivotTable												
10		All	Sales	Margin	Cost of Sales	Margin Pont							
11	All	260617.92	238166	215762	22404	0.905931157							
12	Total Quarter	260617.92	238166	215762	22404	0.905931157							
13	January	111693.7514	109101	106511	2590	0.976260529							
14	1st Quarter	135527.4141	129007	122497	6510	0.949537622							
15	February	11067.60387	8904	6744	2160	0.757412399							
16	March	12766.05882	11002	9242	1760	0.840029086							

 If you click across cells B4 to E4 you will see the new formula: {=OLATableMember(\$B\$1,\$B\$2,"Filter",0,"Version","Actual")}

## 17.OLATableMembers

[NOTE: this function is not utilized in PowerExcel Version 22 or after—documentation is retained here for backwards compatibility.]

**Function Description:** This function covers a 'cell range' or a 'group of cells' that define the Dimension Name and the corresponding Member/s that will be displayed along <u>the Filter area or</u> of a PowerExcel Slice. [NOTE: when used with the Row area, this function is used when either Dynamic Rows Labels or Constrain Empty Rows is enabled—both by means of a checkbox in the PowerExcel pane.] Individual Dimension members are indicated, rather than a 'cell range', and to change the Member/s displayed requires only that any Members be added or deleted in the cell referenced by the last argument.

#### Syntax: OLATableMembers (Connection, Cube, AXIS, Index, Dimension, Members)

Connection: Enter the PowerExcel connection which contains the information about the Olation server URL and the source database name.

Cube: Enter the name of the source/target Cube; or enter the cell reference that contains the name of the source or target Cube you wish to establish connection to.

AXIS: This indicates the area of the PowerExcel Slice where the data will appear (i.e., Filter, Column or Rows)

#### Index: 0

[NOTE: When Filter is indicated, Index will always be "0", and changing this number will not change the value result in PowerExcel.]

Dimension: Enter the Dimension name or the cell reference that contains the name of the Dimension that exists within the specified Database above.

Members: Enter the Member names in the cell reference that contains the name of the preferred display Members along the Filter or the Rows area of the specified Dimension.

#### **Remarks:**

- The PowerExcel Connection must exist.
- The Olation Web Service must be running.
- The Database must be opened and running on the specified server.
- The Cube must exist within the specified database.
- The Dimension must exist within the specified database.
- The Member must exist within the specified Dimension.
- All the parameters are compulsory since the function covers a 'range of cells'

#### Example: for Filter area

The example Slice below shows a PowerExcel Perspective Slice. The **OLATableMembers** function is used to define the Members to display along the Filter area of the PowerExcel Slice. Additionally, the **OLATableMembers** is a 'Range Reference', meaning it is a formula function that governs a group of cells. Hence, if you click on any cell containing the formula, you will notice that the formula is enclosed in 'Curly Brackets', an indication that this is a Range Reference: all cells covered by the same Range reference will render the same formula.

- As in the example screenshot below, the **OLATableMembers** formulas can be found in the cells **B5:E5** (*RegionsNOTE* Dimension with Members referenced in Cell \$F\$5).
- When you click on the cell containing the OLATableMembers formula (as in the example, the active cell is B5) notice that the OLATableMembers formula that appears in the formula bar is enclosed in curly brackets. When you click through the cells that are part of the cell range—C5, D5 and E5—notice that they will show the same formula as that seen in cell B5:

B5		• : × •	√ fx {=0	DLATableM	embers(\$	B\$1,\$B\$2,"	Filter",0,"Re	gionsNOT	"E",\$F\$5	)}
	А	В	с	D	E	F	G	н		PowerExcel - ×
1	Database:	USING OLATION	J							
2	Cube:	SALES								Database Cube
3	Dimensior	Filter	SALES Measu	Members	Amount					USING_OLATION ~ SALES ~
4		Filter	Version	Members	Variance					Filters
5		Filter	RegionsNOTE	Members	Canada ,	l Canada,U	nited States	,Brazil		L SALES Measure: Amount
6		Column	MyAccounts	Range	\$B\$10:\$E	\$10				ピ Version: Variance ピ RegionsNOTE: Canada, United States, Brazil
7		Row	Month	Range	\$A\$11:\$A	\$29				
8										
9	OLAPivotT	able								
10		Sales	Margin	Cost of Sa	Margin Po	nt				Columns
11	January	635	11140	-10505	0	)				は MyAccounts: Sales, Margin, Cost of Sales, Margin Pcnt
12	1st Quarte	-1229144	-1133291	-95853	0	)				
13	1st Trimes	-1224960	-1130807	-94153	0	)				
14	February	1177	88105	-86928	0	)				Rows
15	March	-1230956	-1232536	1580	0					Month: January, 1st Quarter, 1st Trimester, February, March, Apr
16	April	4184	2484	1700	0	)				
17	2nd Quart	14404	1009343	-994939	0	)				
18	May	4790	3130	1660	0	)				
19	2nd Trime	23150	1015969	-992819	0	)				Step 1 - Location Step 2 - Slice Type
20	June	5430	1003729	-998299	0					Current Sheet: SA\$1 Perspective
24	IL.	6100	4000	2020	~					O New Worksheet

#### {=OLATableMembers(\$B\$1,\$B\$2,"Filter",0,"RegionsNOTE",\$F\$5)}

- By clicking in the formula bar area (in the next image, the mouse cursor is placed at the end of the formula), the cell references corresponding to the OLATableMembers function will be outlined on the spreadsheet. The OLATableMembers function returns Filter(B5), RegionsNOTE(C4), Members(D4) and \$F\$5—this latter cell itself contains the Member/s referenced by the function (in this example: Canada, United States, Brazil).
- It is also referencing the Cube called "SALES"(\$B\$2) and is using the PowerExcel connection/OLADatabase connection called "USING_OLATION"(\$B\$1).
   Note: When you are on edit mode of a Range Reference type of formula, notice that the 'Curly Brackets' disappear. Click on Esc (Escape) to come out of the formula bar.

# Power**Excel**

SU	М	• : 🗙		/ <i>f_x</i> =0	LATableM	embers(\$	<mark>3\$1,\$B\$</mark> 2,"	Filter",0,"R	egionsNOT	E",\$F\$5)
	А	В		С	D	E	F	G	н	I
1	Database:	USING OLAT	FION							
2	Cube:	SALES	Ī							
3	Dimension	Filter		SALES Measur	Members	Amount				
4		Filter		Version	Members	Variance				
5		,\$F\$5)		RegionsNOTE	Members	Canada , l	Canada,U	hited State	s,Brazil	
6		Column		MyAccounts	Range	\$B\$10:\$E\$	510			
7		Row		Month	Range	\$A\$11:\$A	\$29			
^					_					

Function Argu	iments						? ×	(			
OLATableMem											
Connection	\$B\$1		<u>↑</u>	= "USING OLATION	1"		^				
Cube	\$B\$2		Ť	= "SALES"				LT.			
AXIS	"Filter"	Function Argu	ments							?	$\times$
Index	0	OLATableMem	oers							_	
Dimension	"RegionsNOT	Cube	\$B\$2		1	=	"SALES"				^
No help availabl	٩	AXIS	"Filter"		1	=	"Filter"				
	с.	Index	0		1	=	0			,	
		Dimension	"RegionsN	IOTE"	<u>↑</u>	=	"RegionsNOTI				
		Members	\$F\$5		1	=	"Canada,Unite	d State	s,Brazil'		~
Formula result =	= Filter	No help availabl	e.			=	{"Filter","Regio	onsNOT	"E","Mer	nbers","C	la
Help on this fun	ction			Cube							
		-	-								
		Formula result =					_				
		Help on this fun	<u>tion</u>					Ok	<	Ca	ancel

#### **Cell References:**

=OLATableMembers(\$B\$1,\$B\$2,"Filter",0,"RegionsNOTE",\$F\$5)

- \$B\$1- the Database name or the PowerExcel connection name/cell reference that contains the name of the Database or the PowerExcel connection, i.e.,
   USING_OLATION
- \$B\$2- the Cube name or the cell reference that contains the name of the Cube, i.e.,
   SALES
- o "Filter"- This indicate that the data will appear along the Filter area of the Slice
- "0"- [Note: this is a constant when Filter is indicated, and there will be no change if another number is used.]
- "RegionsNOTE" the Dimension name that exists within the database placed along the Filter area of the Slice
- \$F\$5- the Member names that exist within the specified Dimension that are referenced by that Cell: <u>those Members values will be added for the values returned</u> <u>to the spreadsheet</u>.

This last bullet point is key: when the **OLATableMembers** function is used with the Filters area of the spreadsheet, values returned will be added for the Members specified. In this spreadsheet example, the values for *Cost of Sales*, *Variance*, in *January* is **-10505** (Cell D11, in)—that is, for the RegionsNOTE (i.e., the regions) members of *Canada*, *United States* and *Brazil* <u>added</u> <u>together</u>. These Members exist in Cell **\$F\$5** and are referenced in the last argument of the **OLATableMembers** function—all as shown in the following image. (Not coincidentally, those are the Members that appear in the PowerExcel pane on the right, as the Filter selections for RegionsNote.)

B5		• : × ·	✓ fx {=0	DLATableM	embers(\$E	\$\$1,\$B\$2,	'Filter",0, 'R	egionsNC	TE",\$F\$5)}		
	А	В	С	D	E	F	G	н	I.	*	PowerExcel
1	Database:	USING OLATION	N								FOWEILXCEI
2	Cube:	SALES									Database Cube
3	Dimensior	Filter	SALES Measu	Members	Amount						USING_OLATION ~ SALES
4		Filter	Version	Members	Variance						T Filters
5		Filter	RegionsNOTE	Members	Canada , l	Canada,l	United State	s,Brazil			は SALES Measure: Amount
6		Column	MyAccounts	Range	\$B\$10:\$E\$	10					L' Version: Variance
7		Row	Month	Range	\$A\$11:\$A	\$29					^[] RegionsNOTE: Canada,United States,Brazil
8											
9	OLAPivotT	able									
10		Sales	Margin	Cost of Sa	Margin Pc	nt					Columns
11	January	635	11140	-10505	0						は MyAccounts: Sales, Margin, Cost of Sales, Margin Pcnt
12	1st Quarte	-1229144	-1133291	-95853	0						
13	1st Trimes	-1224960	-1130807	-94153	0						
14	February	1177	88105	-86928	0						

• Next, assume that you wish to change the spreadsheet to show values returned for only *United States* and *Canada*: you can of course use the PowerExcel pane to the right—you would double-click on the dimension, *RegionsNOTE*, and then select those two countries, so that their values would be added.

OR

- You can now use the **OLATableMembers** function: simply click in the Cell referenced by the parameter at the end of the function, in this case Cell **\$F\$5**. Delete Brazil (and the comma that precedes it).
- Hit Enter, then F9.
   The value for United States and Canada, added together, appears in cell D11 (that is, -11005).

В5		• : × •	✓ fx {=0	DLATableM	embers(\$B	3\$1,\$B\$2,"	Filter",0,"Re	gionsNOT	E",\$F\$5)}	
1	A Database:	B USING OLATION	С	D	E	F	G	Н	*	PowerExcel 👻
2	Cube:	SALES	-							Database Cube
3	Dimensior	Filter	SALES Measu	Members	Amount					USING_OLATION ~ SALES
4		Filter	Version	Members	Variance					Filters
5		Filter	RegionsNOTE	Members	Canada , l	Canada,U	nited States			2 SALES Measure: Amount
6		Column	MyAccounts	Range	\$B\$10:\$E\$	510				ピ Version: Variance ピ RegionsNOTE: Canada.United States.Brazil
7		Row	Month	Range	\$A\$11:\$A	\$29				RegionsNOTE: Canada, United States, brazil
8										
9	OLAPivotT	able								
10		Sales	Margin	Cost of Sa	Margin Pc	nt				Columns
11	January	56	11061	-11005	0					は MyAccounts: Sales,Margin,Cost of Sales,Margin Pcnt
12	1st Quarte	1582	10047	-8465	0					
13	1st Trimes	3995	11260	-7265	0					
14	February	-409	-1869	1460	0					

#### Example 2: Use of OLATableMembers function with Dynamic Row Labels enabled

Until now, we have shown the **OLATableMembers** function used for the Filters area. Another use of the function occurs when either of the following is enabled by its corresponding checkbox in the PowerExcel pane: (a) Dynamic Row Labels, or (b) Constrain Empty Rows.

For present purposes we will show what happens when 'Dynamic Row Labels' is enabled:

- Create a Slice using the OLAPivotTable function, like the one in the following image. When you initially click in the cell that shows Row (**B7** in the example), what appears in the formula bar is an OLATableRange function—this function will be explained at a later point in this document. (As an aside: this function also covers a 'cell range' or a 'group of cells': you will see the same formula in Cells C7, D7 and E7).
- Locate/enable the **Dynamic Row Labels checkbox** (boxed in the image) in the PowerExcel pane to the right. Click **Update**. The Slice will look as follows:

Auto	oSave 🧿	₩ B	5.6	~ <b>&amp; ~</b>	<b>≂</b> 6	Book1 - Exa	:el	₽ Sear	ch							æ -	- 0	×
File	Hom	ne Inse	ert Dra	w Page	e Layout	Formulas	Data	Review	View	Develope	r Help	Power	Excel I	Power	Pivot	ය Share	₽ Comme	ents
O New	Open (		resh Show Sideba	Find Op r OLA Fx	tions Cor	nections 0	ptions Clea Cach			e Change S rd License L Hei	pdates Pov	? About werExcel						
B7		• = :	× ✓	<i>f</i> _x {=0	LATableMe	mbers(\$B	\$1,\$B\$2,"R	ow",0,"Mor	nth",\$F\$7)]	}								
	A	В	с	D	E	F	G	н	1	J	к	L	м					
Dat	tabase:	USING OLA	ATION												PowerExcel		*	>
Cu	be:	SALES													C SALES Measure: Amount			
Dir	mension	Filter	SALES Me	Members	Amount										レ Version: Variance レ RegionsNOTE: World			
		Filter	Version	Members	Variance										Regionsidore. Wond			
;				Members	World													
	-		MyAccour		\$B\$10:\$E\$1													
7		Row	Month	Members	Total Quar	Total Qua	ter,Total T	rimester, Ja	nuary,1st	Quarter,1st	Trimeste	r,February,	March,Ap	ri	A Columns			
3														- 11	4 MyAccounts: Sales, Margin	Cost of Sales.	Margin Pcnt	
	APivotT																	
0		Sales			Margin Pcr	nt								- 11				
		-2117266		-1178827	0									- 1				
		-2117266		-1178827											🔀 Rows			
3 Jar		100134		-9755 -194722											🖾 Month: Total Quarter, Total	Trimester, Janu	ary, 1st Quarte	er,1s
-		-1131785 -1128609																
-	bruary	-1128603			-									-				
7 Ma			-1233716															
8 Ap		3176													Step 1 - Location	Step 2 - SI	ice Type	
	d Quart	9958			-										Current Sheet: \$A\$1 ¥	Perspe	ctive	
0 Ma		3348													O New Worksheet	O DB Fun	ctions	
		-969462			0									11	O New Workbook	O Power	Analyzer	
2 Jur		3434			0									11	Step 3 - Additional Options			
3 Jul		3409			0									11	Hide Empty Rows	Allow Exce	- Functions	
_	, Quarte	-971042	-978486	7444	0									11	Delete Removed Rows	Format Ce		
5 Au	gust	-979653	-982687	3034	0									11			ina by type	
	ptembe	5202	3052	2150	0										Dynamic Row Labels			
4	->	Sheet1	+					:	4						Step 4 - 🗊 Update			
Ready	ĒŌ														<			>

- Note that now with your curser where the word Row appears, an **OLATableMembers** function appears in the formula bar (also shown in the preceding image).
- The same function will appear as you move your cursor right (to Cells C7, D7, E7).
- As in Example 1, the referenced Members (here for the *Months* dimension) are indicated in the last parameter of the function: Cell \$F\$7. All the Months indicated there—as a consequence of Dynamic Row Labels being enabled—are shown in Rows in the Slice. As a consequence, one can remove or add Members by typing them in, or by deleting them (just as in Example 1), and the Rows will reflect the new list of Months. In the

following image, the first six months of the year have been left (or typed in). After hitting **Enter** and **F9**, the Slice will now show only those 6 months in Rows.

F7	,	- : :	× v	<i>f</i> _≭ 'Jar	nuary,Februa	ry,March,4	April, May, J	une		
	А	В	с	D	E	F	G	н	I.	J
1	Database:	USING OL	ATION							
2	Cube:	SALES								
3	Dimensio	Filter	SALES Me	Members	Amount					
4		Filter	Version	Members	Variance					
5		Filter	RegionsN	Members	World					
6		Column	MyAccour	Range	\$B\$10:\$E\$10					
7		Row	Month	Members	January , Fe	January, Fi	ebruary, Ma	arch,April,I	May,June	
8										
9	OLAPivot1	Table								
10		Sales	Margin	Cost of Sa	Margin Pcnt					
11	January	100134	109889	-9755	0					
12	February	37	186764	-186727	0					
13	March	-1231956	-1233716	1760	0					
14	April	3176	1476	1700	0					
15	May	3348	1478	1870	0					
16	June	3434	1001553	-998119	0					
17										
18										
19										
20										
21										

## 18.OLATableRange

**Function Description:** This function covers a 'cell range' or a 'group of cells' that define the Dimension and corresponding Members that will be displayed along the Rows or Columns of a PowerExcel Slice. The 'cell range' covered by this function must be updated simultaneously and changes will only be committed by use of the CTRL+SHIFT+ENTER keys. This function applies to PowerExcel Perspective Slice or PowerExcel DB Functions Slice outputs when they are initially created.

To change the Display Members along the Row or Column of a PowerExcel Slice, click on all the cells covered by the OLATableRange function, change the 'range function argument' or the last parameter and enter the 'new target range'. Press the **Ctrl+Shift+Enter** keys to commit the changes. Notice that the update is reflected across all the cells covered by the function.

#### **Syntax:** OLATableRange (Connection, Cube, AXIS, Index, Dimension, Range)

Connection: Enter the PowerExcel connection that contains the information about the Olation server URL and the source database name.

Cube: Enter the name of the source/target Cube; or enter the cell reference that contains the name of the source or target Cube.

AXIS: This indicates the area of the PowerExcel Slice where the data will appear (i.e., Filter, Column or Rows)

Index: 0 [NOTE: When there are no "stacked Dimensions" in Row or Column, "0" will always show; If there are stacked Dimensions, the number will reflect the order of the Rows or Columns, starting with "1" as the "topmost" in the stack, and continuing.]

Dimension: Enter the Dimension name or the cell reference that contains the name of the Dimension that exists within the specified Database above.

Range: Enter the range corresponding to the target Display Members along the row or column

#### **Remarks:**

- The PowerExcel Connection must exist.
- The Olation Web Service must be running.
- The Database must be opened and running in the specified server.
- The Cube must exist within the specified database.
- The Dimension must exist within the specified Database.
- All the parameters are compulsory since the function covers a 'range of cells'.
- It is imperative that 'All' cells governed by the OLATableRange function be updated in order to successfully commit the changes to the formula.

#### Example:

The example Slice below shows a PowerExcel Perspective Slice. The **OLATableRange** function is used to define what Members to display along the Row or Column area of a PowerExcel Slice. Additionally, the **OLATableRange** is a 'Range Reference', meaning it is a formula function that governs a group of cells. Hence, if you click on any cell containing the formula, you will notice that the formula is enclosed in 'Curly Brackets', an indication that this is a Range Reference; all cells covered by the same Range reference will return the exact same formula.

- As in the example screenshot below, the OLATableRange formula for Columns can be found in the cells B6:E6 (*Account* Dimension on Columns). Clicking through all the cells governed by this specific Range Reference formula will return the exact same formula.
- When you click on the cell containing the **OLATableRange** formula (the example, the active cell is **B6)**, notice that the **OLATableRange** formula that appears in the formula bar is enclosed in curly brackets. When you click through the cells that are part of the cell range: **C6**, **D6** and **E6**, notice that it will show the same formula as that seen in cell B6:

# {=OLATableRange(\$B\$1,\$B\$2,"Column",0,"Account",OLA_Account_90819be4ceec409bb8cc 178762a60c8a_Members)}

						at the whole fo dicating that t					-		
Bé	5		v	: × ✓		oleRange(\$B\$1,\$B 94ceec409bb8cc17				_Account	•		^
	А	В	с	D	E	F	G	н	I	J	К	L	
1	Database:	USING_OLATION											
2	Cube:	SALES											
3	Dimensions:	Filter	SALES Measure	Members	Amount								
4		Filter	Version	Members	Variance								
5		Filter	Region	Members	World								
б		Column	Account	Range	\$B\$10:\$F\$10								
7		Row	Month	Range	\$A\$11:\$A\$28								
8													
9	OLAPivotTable												
10		All	Sales	Margin	Cost of Sales	Margin Pcnt							
11	All	50685.10857	55672	60663	-4991	1.089650093							
12	Total Quarter	50685.10857	55672	60663	-4991	1.089650093							
13	January	85431.04054	91995	98558	-6563	1.071340834							
14	1st Quarter	57846.00285	71924	86001	-14077	1.195720483							
15	February	-29822.49618	-21285	-12748	-8537	0.598919427							
16	March	2237.458495	1214	191	1023	0.157331137							

- By clicking in the formula bar area (in the next image, the mouse cursor is placed at the end of the formula), the cell references corresponding to the OLATableRange function will be outlined on the spreadsheet. Column(B6), Account(C6), Range(D6) and \$B\$10:\$F\$10(E6).
- It is also referencing the Cube "SALES"(\$B\$2) NS the PowerExcel connection/Database connection called "USING_OLATION"(\$B\$1) and references to the "cell range" along the column which corresponds to display Members for the Account Dimension (OLA_Account_90819be4ceec409bb8cc178762a60c8a_Members).

**Note:** When you are on edit mode of a Range Reference type of formula, notice that the 'Curly Brackets' disappear. Click on Esc (Escape) to come out of the formula bar.

A	/ERAGE		*	: × 🗸		bleRange(\$ <mark>B\$1,\$B</mark> 4ceec409bb8cc17				_Account_	4		^
	А	В	с	D	E	F	G	Н	I	J	ĸ	L	
1	Database:	USING_OLATION											
2	Cube:	SALES											
З	Dimensions:	Filter	SALES Measure	Members	Amount								
4		Filter	Version	Members	Variance								
5		Filter	Region	Members	World								
б		Members)	Account	Range	\$B\$10:\$F\$10								
7		Row	Month	Range	\$A\$11:\$A\$28								
8													
9	OLAPivotTable												
10		All	Sales	Margin	Cost of Sales	Margin Pcnt							
11	All	50685.10857	55672	60663	-4991	1.089650093							
12	Total Quarter	50685.10857	55672	60663	-4991	1.089650093							
13	January	85431.04054	91995	98558	-6563	1.071340834							
14	1st Quarter	57846.00285	71924	86001	-14077	1.195720483							
15	February	-29822.49618	-21285	-12748	-8537	0.598919427							
16	March	2237.458495	1214	191	1023	0.157331137							

Function Argu	uments						?	×		
OLATableRan	ge									
Connection	\$B\$1		1	= "USING_OLATIC	N"			^		
Cube	\$B\$2	[	<b>^</b>	= "SALES"						1
AXIS	"Colum	Function Argu	iments						?	×
Index	0	OLATableRan	ge							
Dimension	"Accour	Cube	\$B\$2		Ť	=	"SALES"			
		AXIS	"Column"		Ť	=	"Column"			
No help availat	ble.	Index	0		<b>1</b>	=	0			
		Dimension	"Account"		Ť	=	"Account"			
		Range	"OLA_Accou	int_90819be4ceec40	Ť	=	{"All", "Sales	", "Marg	gin","Cost of Sales	×
Formula result	= Colui	No help availal	ole.			=	{"Column","	Accour	nt", "Range", "\$B\$1	
Help on this fu	<u>inction</u>			Cube						
		Formula result						-	W Can ad	
		Help on this fu	inction					C	OK Cancel	

#### **Cell References:**

={OLATableRange(\$B\$1,\$B\$2,"Column",0,"Account",OLA_Account_90819be4cee c409bb8cc178762a60c8a_Members)}

- \$B\$1- the Database name or the PowerExcel connection name/cell reference that contains the name of the Database or the PowerExcel connection, i.e., USING_OLATION
- \$B\$2- the Cube name or the cell reference that contains the name of the Cube, i.e.,
   \$ALES
- o "Column"- this indicates the data will appear along the Column area of the Slice

- 0– this indicates the index number of the order of Dimensions, thus "0" when there are no stacked Dimensions in Rows or Columns to order [otherwise, "1", "2", etc.
- o "Account"- the Dimension name that exists within the database
- OLA_Account_ae313fdff64047288a76921b05908dac_Members- this range corresponds to the target display Members that will dictate what Account members will be displayed along the column area of the Slice output

As an example: assume we have created two Perspective Slices within a worksheet; we want to have the same set of Account Members displayed in our first Perspective Slice based on those appearing in the second Perspective Slice.

• While on the first Perspective Slice, select all cells governed by the **OLATableRange** formula for Account Dimension (**B6:E6**); then click on the formula bar and double-click on the Range parameter (the last parameter). You will notice that the last parameter/Range parameter is highlighted at this point.

A	/ERAGE			>	< 🗸 f _x			<mark>B\$2</mark> ,"Column",0,"		_Account_			
						90819be4ce	ec409bb8cc1	.78762a60c8a_Mer	nbers)				
	А	В	с	D	E	F	G	н	1	J	К	L	м
1	Database:	USING OLATIC	N					Database:	USING_OLATI	ON			
2	Cube:	SALES	1					Cube:	SALES				
3	Dimensions:	Filter	SALES Measure	Members	Amount			Dimensions:	Filter	SALES Measure	Members	Amount	
4		Filter	Version	Members	Variance				Filter	Version	Members	Variance	
5		Filter	Region	Members	World				Filter	Region	Members	World	
б		bers)	Account	Range	\$B\$10:\$F\$10				Column	Account	Range	\$I\$10:\$K\$10	
7		Row	Month	Range	\$A\$11:\$A\$28				Row	Month	Range	\$H\$11:\$H\$22	
8													
9	OLAPivotTable							OLAPivotTable					
10		All	Sales	Margin	Cost of Sales	Margin Pont			Sales	Cost of Sales	Margin		
11	All	50685.10857	55672	60663	-4991	1.089650093		January	91995	-6563	98558		
12	Total Quarter	50685.10857				1.089650093		February	-21285	-8537	-12748		
	January	85431.04054				1.071340834		March	1214	1023			
14	1st Quarter	57846.00285				1.195720483		April	1700				
	February	-29822.49618	-21285	-12748	-8537	0.598919427		May	1788	1046			
	March	2237.458495				0.157331137		June	1785				
	April	2621.829651				0.458235294		July	1666				
	2nd Quarter	8251.205852				0.435615399		August	1391				
	May	2834.656933				0.414988814		September	917				
	June	2794.719269				0.434733894		October	-6223				
	July	3006.656098				0.195678271		November	-9632				
	3rd Quarter	8498.253552				-0.13814796		December	-9644	336	-9980		
	August	3451.883057				-0.48166786							
	September	2039.714397											
	October	-5696.342804				1.084525149							
	4th Quarter	-23910.35369				1.062237735							
	November	-8906.880598				1.075269934							
	December	-9307.130289	-9644	-9980	336	1.034840315							
29													

 Next, go to the second Perspective Slice and select the preferred new range: in the second Perspective Slice this would be I10:K10. Press Ctrl+Shift+Enter keys. The change will be saved across the cell range B6:E6 in the first Perspective Slice.

				- I >	( 🖌 f _x	=OLATableR	ange(\$B\$1, <mark>\$</mark> l	<mark>8\$2</mark> ,"Column",0,",	Account",110:K	10)			
	А	В	С	D	E	F	G	н	I	L J	к	L	м
		USING OLATIC	-				-	Database:	USING OLATI	-		-	
	Cube:	SALES						Cube:	SALES				
3	Dimensions:	Filter	SALES Measure	Members	Amount			Dimensions:	Filter	SALES Measure	Members	Amount	
4		Filter	Version	Members	Variance				Filter	Version	Members	Variance	
5		Filter	Region	Members	World				Filter	Region	Members	World	
6		K10)	Account	Range	\$B\$10:\$F\$10				Column	Account	Range	\$I\$10:\$K\$10	
7		Row	Month	Range	\$A\$11:\$A\$28				Row	Month	Range	\$H\$11:\$H\$22	
8													
9	OLAPivotTable							OLAPivotTable					
0		All	Sales	Margin	Cost of Sales	Margin Pcnt			Sales	Cost of Sales	Margin		
1	All	50685.10857	55672	60663	-4991	1.089650093		January	91995	-6563	98558	1R × 3C	
2	Total Quarter	50685.10857	55672	60663	-4991	1.089650093		February	-21285	-8537	-12748		
3	January	85431.04054	91995	98558	-6563	1.071340834		March	1214	1023	191		
4	1st Quarter	57846.00285	71924	86001	-14077	1.195720483		April	1700	921	779		
5	February	-29822.49618	-21285	-12748	-8537	0.598919427		May	1788	1046	742		
6	March	2237.458495	1214	191	1023	0.157331137		June	1785	1009	776		
7	April	2621.829651	1700	779	921	0.458235294		July	1666	1340	326		
	2nd Quarter	8251.205852	5273	2297	2976	0.435615399		August	1391	2061	-670		
9	May	2834.656933	1788			0.414988814		September	917	1122	-205		
	June	2794.719269	1785			0.434733894		October	-6223				
1	July	3006.656098	1666		1340	0.195678271		November	-9632	725	-10357		
	3rd Quarter	8498.253552				-0.13814796		December	-9644	336	-9980		
	August	3451.883057	1391	-670		-0.48166786							
	September	2039.714397				-0.22355507							
-	October	-5696.342804	-6223	-6749		1.084525149							
-	4th Quarter	-23910.35369	-25499	-27086		1.062237735							
	November	-8906.880598				1.075269934							
	December	-9307.130289	-9644	-9980	336	1.034840315							
29													

# • Click the **Refresh** button in the PowerExcel Tab of the Excel ribbon. Notice that the first Perspective Slice is now updated.

A١	/ERAGE			<b>*</b>	× ✓			ge(\$B\$1,\$B\$2,"Col d488d8ccb790530			int_		
	А	В	с	D	E	F	G	н	I.	J	К	L	м
_		USING_OLATIC	N					Database:	USING_OLATIC	DN .			
_		SALES						Cube:	SALES				
3		Filter	SALES Measu		Amount			Dimensions:	Filter	SALES Measur		Amount	
4			Version		Variance					Version		Variance	
5		Filter	Region	Members	World				Filter	Region	Members	World	
6		_Members)	Account	Range	\$B\$10:\$D\$10				Column	Account	Range	\$I\$10:\$K\$10	
7		Row	Month	Range	\$A\$11:\$A\$28				Row	Month	Range	\$H\$11:\$H\$22	
8													
_	OLAPivotTable							OLAPivotTable					
10		Sales	Cost of Sales	Margin					Sales	Cost of Sales			
11	All	55672	-4991	60663				January	91995	-6563	98558		
12	Total Quarter	55672	-4991	60663				February	-21285	-8537	-12748		
13	January	91995	-6563	98558				March	1214	1023	191		
14	1st Quarter	71924	-14077	86001				April	1700	921	779		
15	February	-21285	-8537	-12748				May	1788	1046	742		
16	March	1214	1023	191				June	1785	1009	776		
17	April	1700	921	779				July	1666	1340	326		
18	2nd Quarter	5273	2976	2297				August	1391	2061	-670		
19	May	1788	1046	742				September	917	1122	-205		
20	June	1785	1009	776				October	-6223	526	-6749		
21	July	1666	1340	326				November	-9632	725	-10357		
22	3rd Quarter	3974	4523	-549				December	-9644	336	-9980		
23	August	1391	2061	-670									
24	September	917	1122	-205									
25	October	-6223	526	-6749									
26	4th Quarter	-25499	1587	-27086									
27	November	-9632	725	-10357									
28	December	-9644	336	-9980									
29													
30													

### 19.OLATableSubset

[NOTE: this function is not utilized in PowerExcel Version 22 or after—documentation is retained here for backwards compatibility]

**Function Description:** This function covers a 'cell range' or a 'group of cells' that define the Dimension and corresponding Members that will be displayed along the Rows or Columns of a PowerExcel Slice. The 'cell range' covered by this function must be updated simultaneously and changes will only be committed by use of the CTRL+SHIFT+ENTER keys. This function applies to the PowerExcel Power Analyzer Slice.

To change the Display Members along the column or row of a PowerExcel Slice, click on all the cells covered by the OLATableSubset function, change to the preferred 'Subset name' or the last parameter and enter the 'new target Subset'. Press the **Ctrl+Shift+Enter** keys to commit the changes. Notice that the update is reflected across all the cells covered by the function.

#### Syntax: OLATableSubset (Connection, Cube, AXIS, Index, Dimension, Subset)

Connection: The PowerExcel connection that contains the information about the Olation server URL and the source database name.

Cube: The name of the source/target Cube; or enter the cell reference that contains the name of the source/target Cube you wish to establish a connection to.

AXIS: This indicates the area of the PowerExcel Slice where the data will appear (i.e., Filter, Column or Rows)

Index: 0 [NOTE: When there are no "stacked Dimensions" in Row or Column, "0" will always show; If there are stacked Dimensions, the number will reflect the order of the Rows or Columns, starting with "1" as the "topmost" in the stack, and continuing.]

Dimension: The Dimension name or the cell reference that contains the name of the Dimension that exists within the specified Database above.

Subset: The Subset name corresponding to the target subset of Members to be displayed along the row or column.

#### **Remarks:**

- The PowerExcel Connection must exist.
- The Olation Web Service must be running.
- The Database must be opened and running in the specified server.
- The Cube must exist within the specified database.
- The Dimension must exist within the specified Database.
- The Subset must exist within the specified Dimension.
- All the parameters are compulsory because the function covers a 'range of cells'
- It is imperative that 'All' cells governed by the OLATableSubset function be updated in order to successfully commit the changes to the formula.

#### Example:

- The example below shows a Power Analyzer Slice. The **OLATableSubset** function is used in the PowerExcel Slice to define what Members to display along the Row or Column by picking a pre-defined Subset of Members.
- The **OLATableSubset** function is a 'Range Reference', meaning it is a formula function that governs a group of cells. Hence, if you click on any cell containing the formula, you will notice that the formula is enclosed in 'Curly Brackets', an indication that this is a Range Reference. And all cells covered by the same Range reference will display the same formula.
- As in the example screenshot below, the OLATableSubset formula for Columns can be found in the cells B6:E6 (*Account* Dimension on Columns) and for Rows in cells B7:E7 (*Month* Dimension on Rows). If we look at the OLATableSubset formula for *Account* Dimension, clicking through all the cells governed by this specific Range Reference formula will display the same formula.
- When you click on the cell containing the **OLATableSubset** formula (in the example, the active cell is at cell **B6**), notice that the **OLATableSubset** formula that appears in the formula bar is enclosed in curly brackets. When you click through the cells that are part of the cell range (**C6**, **D6** and **E6**), notice that it will show the exact formula as in cell **B6**:

						e whole formu ting that this i				
Be	5		-	: × 🗸	fx {=OLAT	ableSubset(\$B\$1	\$B\$2,"Co	lumn",0,"4	Account","4	(۱۱۳)}
	А	В	с	D	E	F	G	н	1	J
1	Database:	USING_OLATION								
2	Cube:	SALES								
3	Dimensions:	Filter	SALES Measure	Members	Amount					
4		Filter	Version	Members	Variance					
5		Filter	Region	Members	World					
б		Column	Account	Subsets	ALL					
7		Row	Month	Subsets	ALL					
8										
9	OLAPowerQuery									
10	Month 🗾	All 🔽	Sales 💌	Margin 📃 💌	Cost of Sales 💌	Margin Pcnt 💌				
11	All	50685.10857	55672	60663	-4991	1.089650093				
12	Total Quarter	50685.10857	55672	60663	-4991	1.089650093				
13	January	85431.04054	91995	98558	-6563	1.071340834				
14	1st Quarter	57846.00285	71924	86001	-14077	1.195720483				
15	February	-29822.49618	-21285	-12748	-8537	0.598919427				
16	March	2237.458495	1214	191	1023	0.157331137				
17	April	2621.829651	1700	779	921	0.458235294				
18	2nd Quarter	8251.205852	5273	2297	2976	0.435615399				
19	May	2834.656933	1788	742	1046	0.414988814				
20	June	2794.719269	1785	776	1009	0.434733894				
21	July	3006.656098	1666	326	1340	0.195678271				
22	3rd Quarter	8498.253552	3974	-549	4523	-0.138147962				
23	August	3451.883057	1391	-670	2061	-0.481667865				
24	September	2039.714397	917	-205	1122	-0.223555071				
25	October	-5696.342804	-6223	-6749	526	1.084525149				
26	4th Quarter	-23910.35369	-25499	-27086	1587	1.062237735				
27	November	-8906.880598	-9632	-10357	725	1.075269934				
28	December	-9307.130289	-9644	-9980	336	1.034840315				
29										
30										

{=OLATableSubset(\$B\$1,\$B\$2,"Column",0,"Account","ALL")}

- By clicking in the formula bar area (as can be seen in the image below, the mouse cursor is placed at the end of the formula), it will show the cell references corresponding to the OLATableSubset function. The OLATableSubset function returns data for Column(B6), Account(C6), Subsets(D6) and ALL(E6).
- It is also referencing to the Cube called "SALES"(\$B\$2) and is using the PowerExcel connection/Database connection called "USING_OLATION"(\$B\$1).
   Note: When you are on edit mode of a Range Reference type of formula, notice that the 'Curly Brackets' disappear.

A	VERAGE			* : X	✓ f _× =0	)LATableSubset(\$ <mark>B</mark> \$	1, <b>\$B\$2</b> ,"Co	ilumn",0,"/	Account",".		-
	А	В	с	D	E	F	G	Н		J	к
1	Database:	USING_OLATION									
2	Cube:	SALES									
З	Dimensions:	Filter	SALES Measure	Members	Amount						
4		Filter	Version	Members	Variance						
5		Filter	Region	Members	World						
6		"Account","ALL")	Account	Subsets	ALL						
7		Row	Month	Subsets	ALL						
8											
9	OLAPowerQu	≘ry									
10	Month 🗾 💌	All 🗾	Sales 🗾 💌	Margin 🔄	Cost of Sales	💌 Margin Pent 🛛 💌					
11	All	50685.10857	55672	60663	-49	991 1.089650093					
12	Total Quarter	50685.10857	55672	60663	-49	991 1.089650093	ł				
13	January	85431.04054	91995	98558	-65	63 1.071340834	ŀ				
14	1st Quarter	57846.00285	71924	86001	-140	1.195720483	l				
15	February	-29822.49618	-21285	-12748	-85	0.598919427	,				
16	March	2237.458495	1214	191	. 10	0.157331137	,				
17	April	2621.829651	1700	779	9 9	0.458235294	ŀ				
18	2nd Quarter	8251.205852	5273	2297	7 29	0.435615399	I				
19	May	2834.656933	1788	742	2 10	0.414988814	ŀ				
20	June	2794.719269	1785	776	5 10	0.434733894	ŀ				
21	July	3006.656098	1666	326	5 13	0.195678271					
22	3rd Quarter	8498.253552	3974	-549	45	23 -0.138147962	!				
23	August	3451.883057	1391	-670	) 20	061 -0.481667865	1				
24	September	2039.714397	917	-205	5 11	.22 -0.223555071					
25	October	-5696.342804	-6223	-6749	9 5	1.084525149	1				
26	4th Quarter	-23910.35369	-25499	-27086	5 15	1.062237735	i				
27	November	-8906.880598	-9632	-10353	7 7	1.075269934	ŀ				
28	December	-9307.130289	-9644	-9980	) 3	36 1.034840315					
29											
30											

# Power**Excel**

Function Argu	ments					?	Х		
OLATableSubs	et								
Connection	\$B\$1		▲ = "USING_OLATION"				^		
Cube	\$B\$2		► = "SAIES"						
AXIS	"Column"	Function Argu	iments					? >	
Index	0	OLATableSub	set						
Dimension	"Account"	Cube	\$B\$2	1	=	"SALES	•		,
		AXIS	"Column"	1	=	"Colum	nn"	· · · · · · · · · · · · · · · · · · ·	
No help availab	ole.	Index	0	<u>↑</u>	=	0			
	C.	Dimension	"Account"	1	=	"Accou	nt"		
		Subset	"ALL"	Ť	=	"ALL"		~	
Formula result	= Column	No help availat	ole.		=	{"Colur	nn","4	Account", "Subsets", "ALL	
Help on this fu	nction		Cube						
		Formula result	= Column						
		Help on this fu	nction					OK Cancel	

#### **Cell References:**

={OLATableSubset(\$B\$1,\$B\$2,"Column",0,"Account","ALL")

- \$B\$1- the Database name or the PowerExcel connection name/cell reference that contains the name of the Database or the PowerExcel connection, i.e., USING_OLATION
- \$B\$2- the Cube name or the cell reference that contains the name of the Cube, i.e.,
   SALES
- o "Column"- this indicates the data will appear along the Column area of the Slice
- 0- this indicates the index number: "0" if there are no stacked Dimensions in Columns or Rows; if either are stacked, the index number will be "1" for the topmost Dimension, "2" for the next, etc.]
- o "Account"- the Dimension name that exists within the database
- "ALL"- this range corresponds to the target display Members that will dictate the Account members displayed along the column of the Slice output

To change the Subset displayed by changing the Subset parameter (note that this example concerns the Rows, for the *Month* Dimension, in order to use a Subset in this dimension).

Assuming we know that these are the Subsets that exist within the Month Dimension:

Select Members	_	
Members Hierarchy Subsets	Q	8 🗸
Find: Q All Aggregates Months Details		

 Click and Highlight the cells B7 to E7 OLATableSubset formula for the Month Dimension along the Rows), then click on the Function button. The Functions Arguments dialog box appears:

Notice that it displays the particulars of the cell references.

ВŢ	7				- : ×	✓ f _x =	OLATableSub	set(\$B\$1	,\$B\$2,"Row	",0,"Month	","ALL"	)		
	А	В	С	D	E	F	G	н	1	J	К	L	м	N
1	Database:	USING_OLATIO	DN											
2	Cube:	SALES												
3	Dimensions:	Filter	SALES M	Members	Amount									
4		Filter	Version	Members	Variance									
5		Filter	Region	Members	World									
6		Column	Account	Subsets	ALL									
7		"ALL")	Month	Subsets	ALL									
8														
9	OLAPowerQue	≘ry												
10	Month 🛛 💌	All 🗾	Sales 💌	Margin 💌	Cost of Sales 💌	Margin Pent	<b>*</b>							
11	All	50685.10857	55672	60663	-4991	1.08965009								
2	Total Quarter	50685.10857	55672	60663	-4991	1.08965009	Function Arg	uments					?	- ×
13	January	85431.04054	91995	98558	-6563	1.07134083		set						
14	1st Quarter	57846.00285	71924	86001	-14077	1.19572048				Î	- "1151	NG_OLATION"		~
15	February	-29822.49618	-21285	-12748	-8537	0.59891942						-		
16	March	2237.458495	1214	191	1023	0.15733113		<u> </u>		1	= "SAL			
17	April	2621.829651	1700	779	921	0.45823529	AXIS	"Row"		Ť	= "Rov	w"		
	2nd Quarter	8251.205852	5273			0.43561539	Index	0		1	= 0			
19	May	2834.656933	1788	742	1046	0.41498881	Dimension	"Month"		1	= "Mo	nth"		~
	June	2794.719269	1785			0.43473389					= {"Rot	w", "Month", "S	ubsets"."ALL'	3
	July	3006.656098	1666			0.1956782	No help availa	ble.						·
22	3rd Quarter	8498.253552	3974	-549	4523	-0.13814796			Connection					
	August	3451.883057	1391			-0.48166786								
	September	2039.714397	917			-0.2235550								
	October	-5696.342804	-6223	-6749		1.08452514	Formula result	- Dow						
	4th Quarter	-23910.35369	-25499			1.06225773								
27	November	-8906.880598	-9632	-10357	725		Help on this fu	inction				C	ж	Cancel
28	December	-9307.130289	-9644	-9980	336	1.03484031	J							
29														

• Scroll down to the Subset parameter and change it to a new preferred subset—e.g., "Months"—then click OK.

Note: Make sure that the parameter is enclosed in double quotes.

# Power**Excel**

Function Argu	uments			?	×
OLATableSub	set				
Cube	\$B\$2	Ť	=	"SALES"	^
AXIS	"Row"	Ť	=	"Row"	1.00
Index	0	Ť	=	0	
Dimension	"Month"	Ť	=	"Month"	
Subset	"Months	Ť	=	"Months"	~
No help availa	ple.		=	{"Row", "Month", "Subsets", "Mont	:hs'
	Subset				
Formula result <u>Help on this fu</u>				ОК	Cancel

• Click **OK**. Then click **Refresh** the PowerExcel Slice ribbon. The PowerExcel Power Analyzer Slice is now updated to show the new display Members along the rows as shown below:

B7	7				<b>–</b> :	×	√ f _x		
							- JA		
	А	В	С	D	E		F	G	Н
1	Database:	USING_OLATIC	N						
2	Cube:	SALES							
3	Dimensions	Filter	SALES M	Members	Amount				
4		Filter	Version	Members	Variance				
5		Filter	Region	Members	World				
6		Column	Account	Subsets	ALL				
7		Row	Month	Subsets	Months				
8									
9	OLAPowerQ	APowerQuery							
10	Month 🔄	All 🗾	Sales 💌	Margin 💌	Cost of Sal	es 💌	Margin Pent 💌		
11	January	85431.04054	91995	98558		-6563	1.071340834		
12	February	-29822.49618	-21285	-12748		-8537	0.598919427		
13	March	2237,458495	1214	191		1023	0.157331137		
14	April	2621.829651	1700	779		921	0.458235294		
15	May	2834.656933	1788	742		1046	0.414988814		
16	June	2794.719269	1785	776		1009	0.434733894		
17	July	3006.656098	1666	326		1340	0.195678271		
18	August	3451.883057	1391	-670		2061	-0.481667865		
19	September	2039.714397	917	-205		1122	-0.223555071		
20	October	-5696.342804	-6223	-6749		526	1.084525149		
21	November	-8906.880598	-9632	-10357		725	1.075269934		
22	December	-9307.130289	-9644	-9980		336	1.034840315		
23									

### 20.OLATableSubsets

**Function Description:** This function is used in a Perspective Slice, with Dynamic Rows enabled. Its use enables the Slice to reflect changing Rows by obtaining a different sets of Dimension Members, composed of individual Members; ad-hoc selections of Members, and Subsets, in any order.

This function covers a 'cell range' or a 'group of cells' that define the Dimension and corresponding Members that will be displayed along the Rows of a PowerExcel Slice. The 'cell range' covered by this function must be updated simultaneously and changes will only be committed by use of the CTRL+SHIFT+ENTER keys.

To change the Display Members along the rowS of a PowerExcel Slice, click on all the cells covered by the OLATableSubsets function, change to the preferred 'Subset name' or the last parameter and enter the 'new target Subset'. Press the **Ctrl+Shift+Enter** keys to commit the changes. Notice that the update is reflected across all the cells covered by the function.

#### Syntax: OLATableSubsets (Connection, Cube, Axis, Index, Dimension, Subsets)

Connection: The PowerExcel connection that contains the information about the Olation server URL and the source database name.

Cube: The name of the source/target Cube; or enter the cell reference that contains the name of the source/target Cube you wish to establish a connection to.

Axis: This indicates the area of the PowerExcel Slice where the data will appear (specifically Rows for this function)

Index: 0 [NOTE: When there are no "stacked Dimensions" in Rows, "0" will always show; If there are stacked Dimensions, the number will reflect the order of the Rows, starting with "1" as the "topmost" in the stack, and continuing.]

Dimension: The Dimension name or the cell reference that contains the name of the Dimension that exists in the Row(s) within the specified Database above.

Subsets: The target cell containing the Members (individually selected Members/Subset[s]) to be displayed along the rows.

#### Remarks:

- The PowerExcel Connection must exist.
- The Olation Web Service must be running.
- The Database must be opened and running in the specified server.
- The Cube must exist within the specified database.
- The Dimension must exist within the specified Database.
- The selected Member(s) and Subset(s) must exist within the specified Dimension.
- All the parameters are compulsory because the function covers a 'range of cells'
- It is imperative that 'All' cells governed by the OLATableSubsets function be updated in order to successfully commit the changes to the formula.

#### Example:

To see the **OLATableSubsets** function in action, first you can create an example Slice using the Perspective method (see arrow, next image); also, check the box for Dynamic Row Labels, which is required for this function to work (see larger arrow, below).

AutoSave 💽	₩ E 9	~ 🤆	≝ ~ <b>% ~</b>	÷	Book1 - E	xcel	𝒫 Search	1						x c
File Home	e Insert	Dr	raw Pa	age Layout	Formu	las Data	a Review	View	Develop	oer H	elp	PowerExc	el 🖻 Share 🖓 Cor	mments
New Open	Save Refresh PowerE	Sideb	oar OLA Fx	Options DF	RDC Cor	nections Op	Cache	New Cube Cube		Change S	Jpdates	About PowerExcel		~
A9 -	: ×	$\checkmark$	<i>f</i> _x =	=@OLAPiv	otTable(\$B	\$1,\$B\$2,\$B	\$3:\$E\$3,\$B\$4	I:\$E\$4,\$B	\$\$5:\$E\$5,\$B\$	7:\$E\$7,\$8	B\$6:\$E\$	6,\$B\$11,F	ALSE, FALSE, TRUE, FALSE, TRUE)	~
A	В	_	с	D	E	F	G	н	1	J	к	<b>^</b>	PowerExcel	- x
1 Database:		_	ATION_PX	L										
2 Cube: 3 Dimensions	Sales : Filter			Members	A								Database Cube	
	Filter			Members									USING_OLATION_PXL ~ Sales	$\sim$
4	Filter			Members									Tilters	
6	Colun		0	Range	\$B\$10:\$F\$	10							🖾 SALES Measure: Amount	
7	Row						bruary,Marc	h 1ct Ou	ortor April I	day luna	2nd Or	ortor	L' Version: Variance	
8	1101	- i	vionen	Members	Saridary, I	January, re	ior dar y, ware	1,150 Qu	arcer, April, r	viay,surie	, 2110 Q	ancer	に Region: World	
9 OLAPivotTa	hlo	-												
10	Sales		Margin	Cost of Sa	Payroll	Profit								
11 January			-13306										Columns	
12 February		1175	-13185										Account: Sales, Margin, Cost of Sales, Payroll, Profit	
13 March		5990	161625											
14 1st Quarter	-59	9681	135134	-194815	0	135134								
15 April	-14	4990	-16610	1620	0	-16610								
16 May	-15	5070	-17130	2060	0	-17130							Rows	
17 June	-20	0500	-21965	1465	0	-21965							2 Month: January, February, March, 1st Quarter, April, I	May, June, 2
18 2nd Quarter	-50	0560	-55705	5145	0	-55705								
19 July	-3	3129	-5574	2445	0	-5574								
20 August	-3	3164	-6398	3234	0	-6398								
21 September	-3	3064	-5254	2190	0	-5254							Step 1 - Location Step 2 - Slice Type	
22 October	-5	5444	-5944	500	0	-5944							● Current Sheet: SA\$1 🖉  ● Perspective ◆	
23 3rd Quarter	-9	9357	-17226	7869	0	-17226							O New Worksheet O DB Functions	
24 November	-6	5244	-6744	500	0	-6744							New Workbook O Power Analyzer	
25 December		5444	-5944	500	0	-5944								
26 4th Quarter		7132	-18632	1500	0								Step 3 - Additional Options	
27 Total Quarte	er -136	5730	43571	-180301	0	43571							Hide Empty Rows Allow Excel Function	s
28													Delete Removed Rows Format Cells by Type	2
29													Dynamic Row Labels	
30														

Note that presently the operative PowerExcel function governing the Row labels is the OLATableMembers function, a "range" function, in Cells B7:E7 (boxed in the following image).

B7	7 <b>*</b> :	× ✓	<i>f</i> * {	=OLATable	Members(	\$B\$1,\$B\$2,	"Row",0,"f	Month",\$F	\$7)}
	А	В	С	D	E	F	G	н	I
1	Database:	USING_OL	ATION_PX	Ľ					
2	Cube:	Sales							
3	Dimensions:	Filter	Sales Mea	Members	Amount				
4		Filter	Version	Members	Variance				
5		Filter	Region	Members	World				
6		Column	Account	Range	\$B\$10:\$F\$	10			
7		Row	Month	Members	January , F	January, Fe	ebruary, Ma	arch,1st Qu	arter, April
8									

• Double-click on **Month**, which brings up the Select Members for Months dialog. While on the Members tab, make a selection of any Members (*May*, *June* and *July* are shown in the image below).

Select Me	embers for	Month				
Members	Hierarchy	Subsets	Calculatio	ns		🗆 🛇 🗆 🔁
↓ <mark>A</mark> -		-	₹ £		Q	# May
∑ Total	Quarter					# June # July
Σ1st Q	uarter					🕂 July
Σ 2nd 0	Quarter					
Σ 3rd Q	luarter					
Σ 4th Q	luarter					
井 Janu	ary					
# Febru	Jary					
🗰 Marc	h					
🗰 April						
# May						
#June						
#July						
# Augu	ist					
44 0 .	1					

• Switch to the Subsets tab and make a selection of any Subset(s) and drag it across to the pane on the right (as shown below, *AGGREGATES*, a default subset, has been added).

Select Members for Month	
Members Hierarchy Subsets Calculations	🗆 🛇 ⊃ 🔁 🔀
Find: Q	# May # June # July
Months DETAILS SetExpression(CHILDREN;Q1) SetExpression(CHILDREN;VITHMEMBER;Q1)	

 Click OK. Note, as in the image below, that the row labels change dynamically to the selected Member(s) and Subset(s). Additionally, the function that governs the row labels is the OLATableSubsets function (boxed in the image). Indeed, this function will show in all cells B7:E7.

Fi	ile Home	Insert D	Draw Pa	age Layout	Formu	llas Dat	a Revie	w View	Develo	per	Help	PowerExce	el 🖻 Share 🖓 Comm	ents
N	) 🗁 🔚 lew Open Save	Refresh Sh Side PowerExcel	ebar OLA Fx	Options Df	RDC Cor	nections Op	Cache	New Cube Cube				About PowerExcel		^
C7	· · · ·	XV	<i>f</i> _x {	=OLATable	Subsets(\$8	3\$1,\$B\$2,"F	low",0,"Mc	onth",\$F\$7))						~
	А	в	с	D	E	F	G	н		J	к			
1	Database:	USING_OI	LATION_PX	a.									PowerExcel	×
2	Cube:	Sales											Sales Measure: Amount     Version: Variance	^
З	Dimensions:	Filter	Sales Mea	Members	Amount								K Region: World	
4		Filter	Version	Members	Variance									
5		Filter	Region	Members	World									
б		Column	Account	Range	\$B\$10:\$F\$	10								- 10
7		Row	Month	Subsets	Members	(Members)	May;June;	July), AGGR	EGATES				🖏 Columns	_
8				[									LAccount: Sales, Margin, Cost of Sales, Payroll, Profit	_
9	OLAPivotTable												A Recount Subsymmight cost of Subsymptotic force	
10		Sales	Margin	Cost of Sa	Payroll	Profit								
11	May	-15070	-17130											
12	June	-20500											🔠 Rows	
	July	-3129											2 Month: May, June, July AND AGGREGATES	_
	Total Quarter	-136730											A MORTH: May, June, July AND AGGREGALES	
	1st Quarter	-59681			0									
	2nd Quarter	-50560												
	3rd Quarter	-9357			0	-17226							Step 1 - Location Step 2 - Slice Type	_
	4th Quarter	-17132	-18632	1500	0	-18632							Current Sheet: \$A\$1      Perspective	
19													New Worksheet     DB Functions	
20													New Workbook     Power Analyzer	
21														
22													Step 3 - Additional Options	
23													Hide Empty Rows Allow Excel Functions	
24													Delete Removed Rows 🔽 Format Cells by Type	
25													Dynamic Row Labels	
26														
27													Step 4 - 🔟 Update	*
	She	set1	+									Þ	<	>
Rea	dy 🔟												▦	100%

Next, to change the reference for the Member(s)/Subset(s) in the function:

• One way to change that Members appear in rows is simply to make a change in the last argument, which references the Member(s)/Subset(s) to be shown: for example, by deleting AGGREGATES (and the preceding comma) in the referenced Cell (F7) and then pressing F9 to refresh the Slice, the rows that will show are as follows:

F7	· • :	× ~	$f_x$	Members(	May;June;	July)		
	А	В	с	D	E	F	G	н
1	Database:	USING_OL	ATION_PX	Ľ				
2	Cube:	Sales						
3	Dimensions:	Filter	Sales Mea	Members	Amount			
4		Filter	Version	Members	Variance			
5		Filter	Region	Members	World			
6		Column	Account	Range	\$B\$10:\$F\$	10		
7		Row	Month	Subsets	Members	Members	May;June;	July)
8								
9	OLAPivotTable							
10		Sales	Margin	Cost of Sa	Payroll	Profit		
11	May	-15070	-17130	2060	0	-17130		
12	June	-20500	-21965	1465	0	-21965		
13	July	-3129	-5574	2445	0	-5574		
14								

 Alternatively, the referenced cell itself can be changed. In the following, a new group of Members (April and May) has been entered, and AGGREGATES has been included again in a new cell, Cell G5: thus, 'Members(March;April),AGGREGATES is entered in G5. To change the reference to these Member(s)/Subset(s), highlight the entire OLATableSubsets function across the range B7:E7; change the last argument to \$G\$5). Note, as shown below, that the indicated Member(s) and Subset(s) show in the dynamic rows in the spreadsheet.

F	ile Home	Insert D	iraw Pa	ige Layout	Formu	las Dat	a Review	View	Developer F
P:	aste S	I <u>U</u> ~				= %~ = = =	\$	neral ~ ~ % 9 	E Conditional F Cormat as Ta Cell Styles ~
CI	ipboard ы	Fo	ont	۲ <u>م</u>	A	lignment	Fa N	lumber 🗔	Style
SU	JM 👻 :	× 🗸	f _x =	=OLATable	Subsets( <mark>\$</mark> E	8\$1,\$B\$2,"F	Row",0,"Mon	th",\$G\$5)	
	А	В	С	D	E	F	G		I J
1	Database:	USING_OL	ATION_PX	L					
2	Cube:	Sales							
з	Dimensions:	Filter	Sales Mea	Members	Amount				
4		Filter	Version	Members	Variance				
5		Filter	Region	Members	World		Members A	oril;May),AG	GREGATES
6		Column	Account	Range	\$B\$10:\$F\$	10			
7		\$G\$5)	Month	Subsets	Members				
8									
9	OLAPivotTable								
10		Sales	Margin	Cost of Sa	Payroll	Profit			
11	April	-14990	-16610	1620	0	-16610			
12	May	-15070	-17130	2060	0	-17130			
13	Total Quarter	-136730	43571	-180301	0	43571			
-14	1st Quarter	-59681	135134	-194815	0	135134			
15	2nd Quarter	-50560	-55705	5145	0	-55705			
16	3rd Quarter	-9357	-17226	7869	0	-17226			
17	4th Quarter	-17132	-18632	1500	0	-18632			

The following show the **OLATableSubsets** function and its cell references for the first Slice shown.

Function Argu	iments				?	×
OLATableSub:	sets					
Connection	\$B\$1		▲ = "USING_OLATION_PXL"			<u>^</u>
Cube	\$B\$2		± = "Sales"			
AXIS	"Row"					? >
Index	0	Function Argu	ments			f 1
Dimension	"Month"	OLATableSubs	;ets			
	Dimension "Month"  OLATableSubsets  Cube \$B\$2  AXIS "Row"  AXIS "Row"  Dimension 0  Dimension 0  Month"  Subsets \$F\$7					"Sales"
No help availat	ole.	AXIS	"Row"	Ť	=	"Row"
	Con	Index	0	Ť	=	0
		Dimension	"Month"	Ť	=	"Month"
		Subsets	\$F\$7	Ť	=	"Members(May;June;July), AGGREG/ 💗
		No help availat	ble.		=	{#VALUE!,0,0,0}
			Cube			
	Formula result =					
	Con     Index     0       Dimension     "Month"       Subsets     \$F\$7   No help available. Cube					OK Cancel

#### **Cell References:**

=OLATableSubsets(\$B\$1,\$B\$2,"Row",0,"Month",\$F\$7)

- \$B\$1- the Database name or the PowerExcel connection name/cell reference that contains the name of the Database or the PowerExcel connection, i.e., USING_OLATION_PXL
- \$B\$2- the Cube name or the cell reference that contains the name of the Cube, i.e., Sales
- o "Row"- this indicates the data will appear along the Row area of the Slice
- 0- this indicates the index number of the order of Dimensions, thus "0" when there are no stacked Dimensions in Rows or Columns to order [otherwise, "1", "2", etc.]
- o "Month"- the Dimension name that exists within the database
- \$F\$7-the cell reference containing the dynamic Member(s)/Subset(s) shown in the Slice.

## 21.OLAWrite

**Function Description:** The OLAWrite Formula function allows a user to write values back to a precise multidimensional data point in an Olation database model from a PowerExcel Slice.

#### Syntax: OLAWrite (Connection, Cube, Value1, Value2,...,ValueN)

Connection: The PowerExcel connection that contains the information about the Olation server URL and the source database name.

Cube: The name of the source/target Cube; or the cell reference that contains the name of the source or target Cube you wish to establish a connection to.

Value1 to ValueN: The related Member references.

Last Value parameter: The write value or the cell reference that contains the data value to be written back to a specific data point to a target Database.

#### Remarks:

- The PowerExcel Connection must exist.
- The Olation Web Service must be running.
- The Database must be opened and running in the specified server.
- The 'Connection' and 'Cube' parameters are compulsory.
- The Value parameters prior to the 'last value parameter' refer to Member references that identify the specific data point where the data value should be written to.
- The 'Last Value parameter' is either the actual write value or the cell that contains the data value or number which will be written back to the target data point within a database.

#### Example:

First we will show how to create an **OLAWrite** formula to write a value to a specific intersection in a target database--for this example, to a data point in the *SALES* Cube of the *USING_OLATION* database.

First create a PowerExcel DB Functions Slice with the orientation of your choosing (e.g., the following image will serve as an example).
 Note: We placed a heading (in Row 9), "OLAReadWrite", at the top of the sample table so we can identify that the cells below are governed by this type of formula.

H2	22				$\times \checkmark f_x$	_						
	А	В	С	D	E	F	G	н	I I	J	к	
1	Database:	USING_OLATION										
2	Cube:	SALES										
3	Dimensions:	Filter	SALES Measure	Members	Amount							
4		Filter	Version	Members	Budget							
5		Filter	Region	Members								
6		Column	Account	Range	\$B\$10:\$D\$10							
7		Row	Month	Range	\$A\$11:\$A\$18							
8												
9		OL	AReadWrite									
10		Sales	Cost of Sales	Margin								
11	January	10000	8888	1112								
12	February	20000	9999	10001								
13	March	0	0	0								
14	1st Quarter	30000	18887	11113								
15	April	0	0	0								
16	May	0	0	0								
17	June	0	0	0								
18	2nd Quarter	0	0	0								
19												
20												
21												
22												
23												
24												
25												
~~	< ▶	Sheet1 (+)				:	•					í

 Note that in an DB Functions Slice, each cell contains an individual formula function, as in the following image (Cell B11 has been clicked on). As we will see, an OLAWrite Formula function also appertains to an individual cell.

A	/ERAGE			•	$\times \checkmark f_x$	=@0 \$A11	LAReadWr )	ite(\$8\$1, <mark>\$</mark> 1	8\$2,\$E\$3,\$I	E\$4,\$E\$5,E	ı\$10,	^
	А	В	с	D	E	F	G	н	I.	J	к	
1	Database:	USING_OLATION	l l									
2	Cube:	SALES										
З	Dimensions:	Filter	SALES Measure	Members	Amount							
4		Filter	Version	Members	Budget							
5		Filter	Region	Members								
б		Column	Account	Range	\$B\$10:\$D\$10							
7		Row	Month	Range	\$A\$11:\$A\$18							
8												
9			AReadWrite									
10		P	Cost of Sales	Margin								
11	January	B\$10,\$A11)	8888	1112								
	February	20000	9999	10001								
	March	0	0	0								
	1st Quarter	30000	18887									
	April	0	0									
	May	0		-								
	June	0	0	-								
	2nd Quarter	0	0	0								
19												
20												



 Next to create an OLAWrite formula—in this case, to write a new Sales value for the month of March.

(In the next image, the area where the **OLAWrite** formulas will go is shaded orange for easy identification.)

L2	!5			•	$\times$ $\checkmark$ $f_s$	:					
	А	В	с	D	E	F	G	н	L	J	к
1	Database:	USING_OLATION									
2	Cube:	SALES									
3	Dimensions:	Filter	SALES Measure	Members	Amount						
4		Filter	Version	Members	Budget						
5		Filter	Region	Members	Mexico						
6		Column	Account	Range	\$B\$10:\$D\$10						
7		Row	Month	Range	\$A\$11:\$A\$18						
8											
9		OL	AReadWrite					OLAWrite			
10		Sales	Cost of Sales	Margin				Sales	Cost of Sales		
11	January	10000	8888	1112			Write				
12	February	20000	9999	10001			Value				
13	March	0	0	0			value				
14	1st Quarter	30000	18887	11113							
15	April	0	0	0			Write				
16	May	0	0	0			Value				
17	June	0	0	0			value				
18	2nd Quarter	0	0	0							
19											
20											

- Define the OLAWrite formula: in Cell H13 click the Function button beside the formula bar. In the Insert Function dialog that appears, choose PowerExcel.ExcelFunctions as the category, select OLAWrite from the function list and click OK.
- In the Function Arguments dialog box, define the parameters:
  - Click on Connection field and then click on cell B1 (the cell reference for USING_OLATION database). Use an Absolute reference so the connection reference appears as \$B\$1.
  - Click on the Cube field, then click on cell **B2** (the cell reference for the *SALES* cube); again, use an absolute reference (**\$B\$2**).
  - Click on the Value 1 field, then click on cell **E3** (the cell reference for the Filter Member *Amount* in the *SALES Measure* Dimension).
  - Click on the Value 2 field, then click on cell **E4** (the cell reference for the Filter Member *Budget* of the *Version* Dimension).
  - Click on the Value 3 field, then click on cell **E5** (the cell reference for the Filter Member *Mexico* of the *Region* Dimension).
  - Click on the Value 4 field, then click on cell B10 (which is the cell reference for the Column Member Sales of the Account Dimension); use the absolute row reference, thus B\$10.
  - Click on the Value 5 field, then click on cell A13 (the cell reference for the Row Member *March* of the *Month* Dimension); use the absolute column reference, thus \$A13.

• Lastly, click on the Value 6 field, then type a new *Sales* value for the month of *March*—for example, **4444**. This is our write value.

**Note:** Notice that the corresponding Database, Cube and other references appear in each corresponding field.

A١	(ERAGE			•	×	f _x	OLA_Versio	n_c00	7a04d24134	ALES_Measure dd39940e1dce9 40a8dc5a4f0a0	)bb	5189,			bdc1,
	А	В	с	D	E		F G	I_doel	H	404000.3441040		ао, вэто, Ј	к	)   L	м
	Database:	USING OLATION													
2	Cube:	SALES													
3	Dimensions:	Filter	SALES Measure	Members	Amount										
4		Filter	Version	Members	Budget										
5		Filter	Region	Members	Mexico										
б		Column	Account	Range	\$B\$10:\$D\$	10									
7		Row	Month	Range	\$A\$11:\$A\$	18									
8															
9		OL	AReadWrite						OLAWrite						
10		Sales	Cost of Sales	Margin					Sales	Cost of Sales	5				
	January	10000	8888		!		Writ	P				The im		ow has b	
_	February	20000	9999				Valu			-				ow nas b show the	een
_	March	0	0					° \$4	\13,4444)					arameter	
	1st Quarter	30000	18887											along the	5
	April	0	0				Writ	е						rguments	3
	May	0	0				Valu						dial		
	June	0	0					-					_	-	
	2nd Quarter	0	0	0	1								+		
19					Function Argu	uments						?	×		
20					-										
21					OLAWrite	_									
22					Connection	\$B\$1			± = "L	JSING_OLATION"			^		
23 24					Cube	\$B\$2			± = "S	ALES"					
24 25					¥alue1	OLA_SA	ALES_Measure_8	b638aa	7) 🛨 = "A	mount"					
25					¥alue2	OLA_Ve	ersion_c007a040	124134c	id 🛨 = "B	Judget"					
27					¥alue3	OLA R	aion d8ebf9f8	800840	17 🛧 = "N	Aevico"					
28							Function Arg	uments						?	ĸ
29					No help availal	ble.	- OLAWrite								
30								010		0000000 40 m		"Massing"			
31							¥alue3		Region_d8ebf			"Mexico"			
32							¥alue4	B\$10		<u> </u>		"Sales"			
33					ormula result	= 4444	¥alue5	\$A13		Ť		"March"			
34					orniula result	= 4444	¥alue6	4444		Ť	=	4444			
35				!	Help on this fu	inction	¥alue 7			1	=				~
36				L							-	4444			
							No help availa	ble.	¥alı	иеб					
							Formula result	:= 444	4						
							Help on this f	unction					ОК	Car	ncel

• Click **OK**. Press **Enter**, then click the **Refresh** button along the PowerExcel Tab of the Excel ribbon. Notice the intersection in the ReadWrite section of the Slice, Cell **B13**, now has the value **4444**.

В1	3			<b>*</b>	× √ f	e =(	@OLAReadWr	ite(\$B\$1,\$B\$	\$2,\$E\$3,\$E\$4,\$E\$5,I	3\$10,\$A13	)			,
	A	В	с	D	E	F	G	Н	I	J	к	L	м	[
1	Database:	USING_OLATION												1
2	Cube:	SALES												
3	Dimensions:	Filter	SALES Measure	Members	Amount									
4		Filter	Version	Members	Budget									
5		Filter	Region	Members										
6		Column	Account	Range	\$B\$10:\$D\$10									
7		Row	Month	Range	\$A\$11:\$A\$18									
3														
9			LAReadWrite					OLAWr						-
0		Sales	Cost of Sales	Margin				Sales	Cost of Sales					-
	January	10000					Write							-
_	February	20000					Value							-
_	March	4444						44	144					-
-	1st Quarter	34444												-
	April	) (					Write							
	May June		-	-			Value							1
-	2nd Quarter		-	-										1
10 19	zhu Quarter		,	0										1
20			OLAV	Vrite form	of <b>4444</b> (a reula) is then v	written	back to the							-
			As	confirmat	he USING_e ion, it is sho in our OLAF	wn on	the exact	se.						

• Click on the **OLAWrite** formula in cell **H13**, then click on the formula bar (notice that the cursor is at the end of the formula). This will show the corresponding cell references of the formula.

A	VERAGE			•	× √ f _x	OL4	_Version_	c007a04d24134	ALES_Measure_8 dd39940e1dce9b 40a8dc5a4f0a00b	b5189,			bdc1,
	А	В	с	D	E	F	G	Н	I.	J	К	L	м
1	Database:	USING_OLATION	1										
2	Cube:	SALES	I										
3	Dimensions:	Filter	SALES Measure	Members	Amount								
4		Filter	Version	Members	Budget								
5		Filter	Region	Members									
б		Column	Account	-	\$B\$10:\$D\$10								
7		Row	Month	Range	\$A\$11:\$A\$18								
8													
9			AReadWrite					OLAWrite					
10		Sales	Cost of Sales	Margin				Sales	Cost of Sales				
	January	10000	8888	1112			Write						
	February	20000					Value						
13	March	4444	0	4444			Tanac	\$A13,4444)					
14	1st Quarter	34444	18887	15557					T				
15	April	0	0	0			Write						
16	May	0	0	0			Value						
	June	0	0	0			Value						
	2nd Quarter	0	0	0									
19													
20													

Function Argu	uments						?	×
OLAWrite								
Connection	\$B\$1		1	= "USING_OLATION"				^
Cube	\$B\$2		1	= "SALES"				
Value 1	OLA_SALES_	Measure_8b638_	aa7i 🛨	= "Amount"				
Value2	OLA_Versio	n_c <b>00</b> 7a <b>04</b> d2413	4dd 🛨	= "Budget"				
Value3	OLA_Region	d8ebf9688228/		= "Mexico"				
		Function Argu	ments					
No help availal	Connection \$B\$1  Cube \$B\$2 Value1 OLA_SALES Value2 OLA_Versio	OLAWrite						
	1	¥alue3	OLA_Re	gion_d8ebf9f882284940	: 1	=	"Mexico"	
		¥alue4	B\$10		Ť	=	"Sales"	
Formula result	= 4444	¥alue5	\$A13		Ť	=	"March"	
		¥alue6	h444		±	=	4444	
Help on this fu	inction	¥alue7			Ť	=		
						=	4444	
		No help availat	ole.					
				¥alue6				
		Formula result	= 4444					
		Help on this fu	nction					

#### **Cell References:**

=OLARead(\$B\$1,\$B\$2,OLA_SALES_Measure_8b638aa768f745a29d0648 37d05abdc1,OLA_Version_c007a04d24134dd39940e1dce9bb5189,OLA_R egion_d8ebf9f882284940a8dc5a4f0a00b3a0,B\$10,\$A13,4444)

- \$B\$1- the Database name or the PowerExcel connection name/cell reference that contains the name of the Database or the PowerExcel connection, i.e., USING_OLATION
- \$B\$2 the Cube in the Database, i.e., SALES Cube
- OLA_SALES_Measure_8b638aa768f745a29d064837d05abdc1 the *Amount* Member in the *SALES Measure* Dimension [Filter reference]
- OLA_Version_c007a04d24134dd39940e1dce9bb5189 the *Budget* Member in the *Version* Dimension [Filter reference]
- OLA_Region_d8ebf9f882284940a8dc5a4f0a00b3a0 the *Mexico* Member in the *Region* Dimension [Filter reference]
- B\$10 the Column Member reference Sales from the Account Dimension [Column reference].
- \$A13 the Row Member reference *March* from the *Month* Dimension [Row reference].
- $\circ$  4444 the new Sales value for March to be written back to the database.

• Next, write the same formula in cell **I13**, but this time, change the month reference to **Cost** of **Sales** (**C\$10**) and the write value to **1111**. Press **Enter** then click the **Refresh** button along the PowerExcel Tab of the Excel ribbon.

CI	13			•	× ~ f;	=@C	)LAReadWr	ite(\$B\$1,\$B\$2,\$	E\$3,\$E\$4,\$E\$5,(	C\$10,\$A13	1)
	A	В	С	D	E	F	G	Н	I	J	К
1	Database:	USING_OLATION									
2	Cube:	SALES									
3	Dimensions:	Filter	SALES Measure	Members	Amount						
4		Filter	Version	Members	_						
5		Filter	Region	Members							
6		Column	Account	Range	\$B\$10:\$D\$10						
7		Row	Month	Range	\$A\$11:\$A\$18						
8											
9			AReadWrite					OLAWrite			
10		Sales	Cost of Sales	Margin				Sales	Cost of Sales		
	January	10000	8888				Write				
	February	20000	9999	1			Value				
	March	4444						4444	1111		
	1st Quarter	34444	19998	14446							
	April	0	0	0			Write				
	May	0	0				Value				
	June	0	0								
	2nd Quarter	0	0	0							
19											
20											

- Once again, the value is saved back to the USING_OLATION database: the new Cost of Sales value appears at the same intersection in the PowerExcel ReadWrite section of the Slice (cell C13).
- Notice also that the relative aggregate points are updated as well (1st Quarter values and *Margin* values).
- When you click over the cells with an **OLAWrite** formula, the corresponding formulas will appear in the formula bar. However, unlike the OLAReadWrite formula, where typing a value will not erase the formula, if you type in a value in the cell with an **OLAWrite** formula, the formula will be deleted and replaced with the value you have entered. As an example, in Cell **I11**, type **2222** and click **Enter**.

11	3			•	$\times \checkmark f_s$	2222	2 🔶				٦
	A	В	С	D	E	F	G	Н	1	J	К
1	Database:	USING_OLATION									
2	Cube:	SALES									
3	Dimensions:	Filter	SALES Measure	Members	Amount						
4		Filter	Version	Members	Budget						
5		Filter	Region	Members	Mexico						
6		Column	Account	Range	\$B\$10:\$D\$10						
7		Row	Month	Range	\$A\$11:\$A\$18						
8											
9		OL	AReadWrite					OLAWrite			
10		Sales	Cost of Sales	Margin				Sales	Cost of Sales		
11	January	10000	8888	1112			Write				
12	February	20000	9999	10001			Value				
13	March	4444	1111	3333			value	4444	2222		<b>_</b>
14	1st Quarter	34444	19998	14446							
15	April	0	0	0			Write				
16	May	0	0	0							
	June	0	0	0			Value				
18	2nd Quarter	0	0	0							
19											
20											

• Note that when you click on the cell, the **OLAWrite** formula is gone and the formula bar shows, simply, the value 2222.