How to…

Calculate with Attributes

Applicable Releases: BW 3.0x

March 2003

1 Business Scenario

You have defined product price as an attribute to material master. You want to use this price to calculate sales revenue, based on quantity sold. Quantity sold per material is stored within an InfoCube. You want to be able to navigate dynamically through a query, while displaying the revenue numbers correctly in each navigation state.

Note: Please also refer to SAPNet (OSS) note 379832, as well as to the relevant Know-How Network Call Slides ("OLAP Engine Aggregation", 3/06/03, where available in SAP Service Marketplace).

2 The Step-By-Step Solution

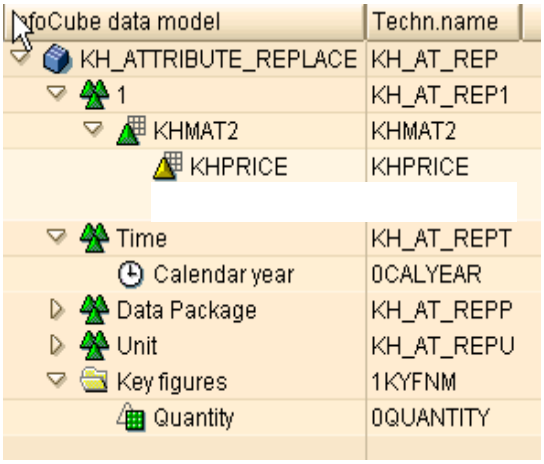
2.1 Description of the scenario

This step-by-step guide describes the necessary steps to create a simple scenario, as outlined above. The following steps will be explained in more detail:

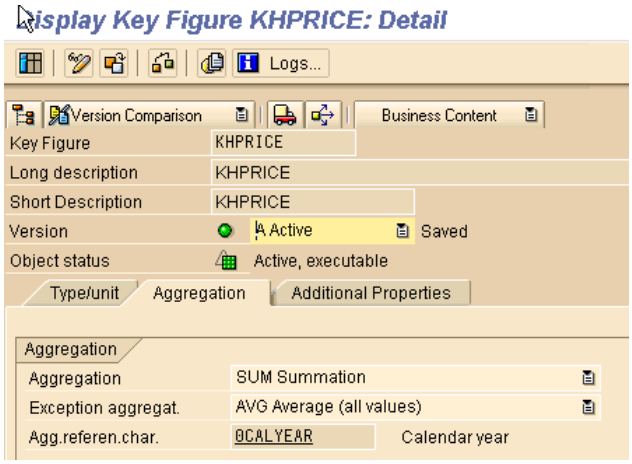
- **Definition of the respective InfoCube and InfoObjects.**
- **Creation of Formula Variable, based on Attribute Value.**
- **Creation of Calculate Key Figure.**
- **Execution of Query.**

2.2 Definition of the InfoCube and InfoObjects

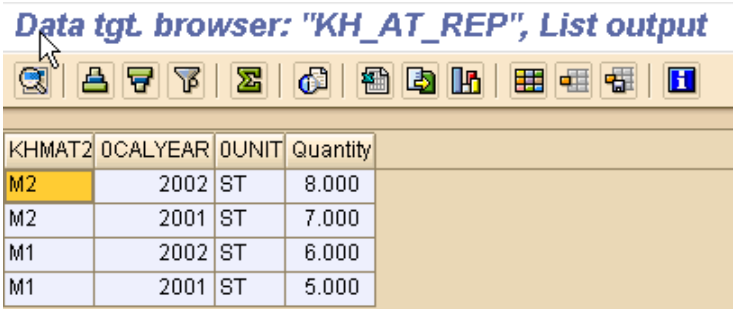
1. Define the data model. The InfoCube in our example contains one customer dimension, with the characteristic KHMAT2 ("Material"). KHMAT2 has defined an attribute KHPRICE ("Price"), of type Key Figure (see below). In addition, the InfoCube contains one Key Figure (0QUANTITY), and one time characteristic (0CALYEAR).



2. The Key Figure attribute KHPRICE is of type "Currency". No special aggregation settings have been defined, in our scenario.

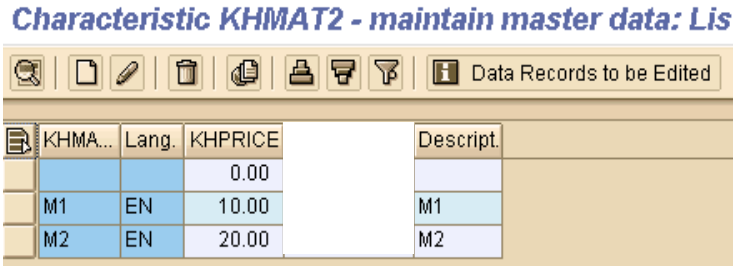


3. Maintain the InfoCube data. In our example, e.g. in 2002 there had been sold 6,000 units of material "M1",



KHMAT2	0CALYEAR	0UNIT	Quantity
M2	2002	ST	8.000
M2	2001	ST	7.000
M1	2002	ST	6.000
M1	2001	ST	5.000

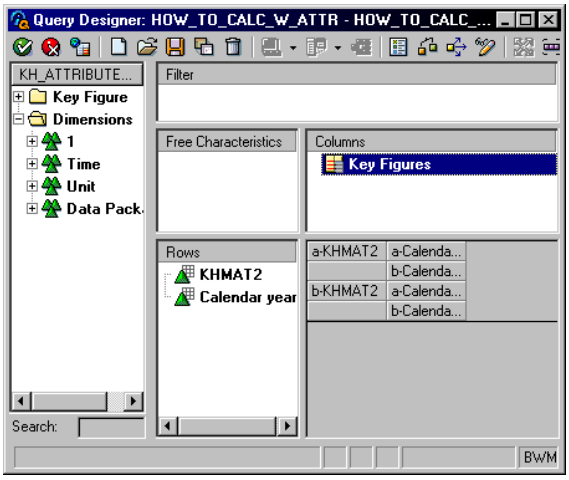
4. Maintain the Master Data. In our example, e.g. the unit price for material "M1" is $10.



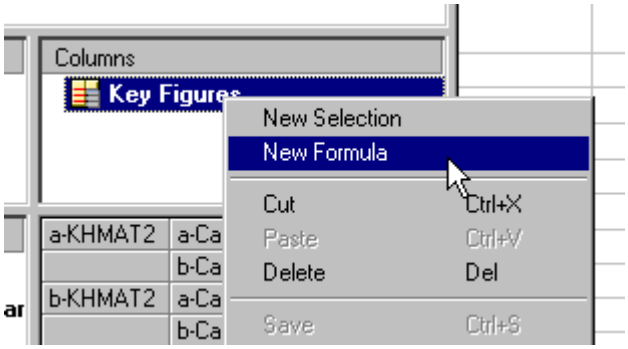
KHMA...	Lang.	KHPRICE	Descript.
		0.00	
M1	EN	10.00	M1
M2	EN	20.00	M2

2.3 Creation and Execution of the Query.

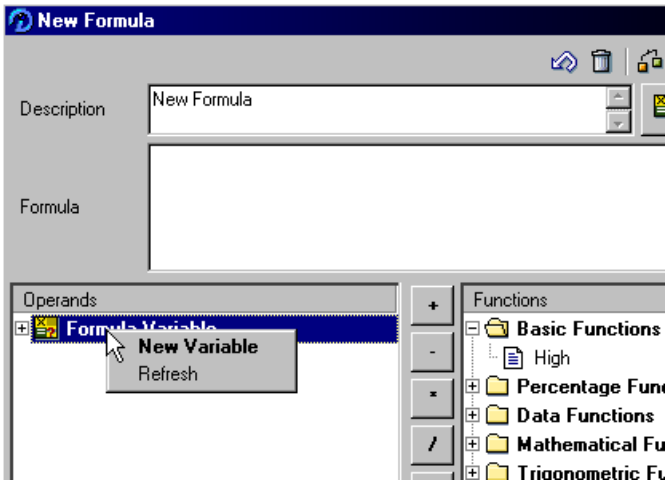
1. Create a new query via BEx. Drag & Drop the characteristics “KHMAT2” and “Calendar Year” into the rows.



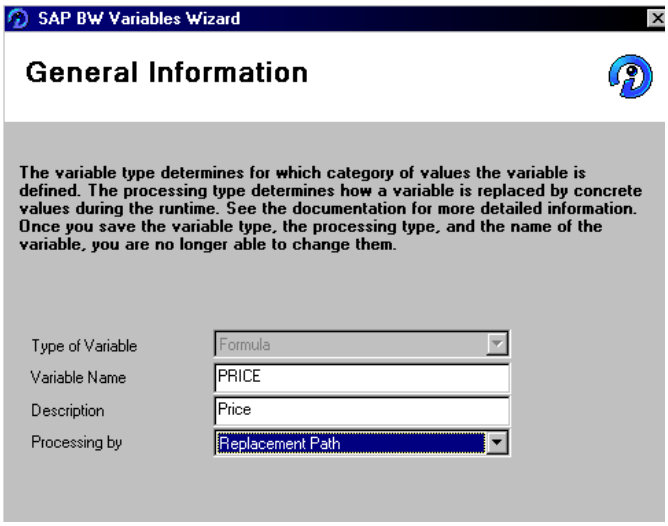
2. From Columns → Key Figures, via context menu (right mouse button) choose “New Formula”.



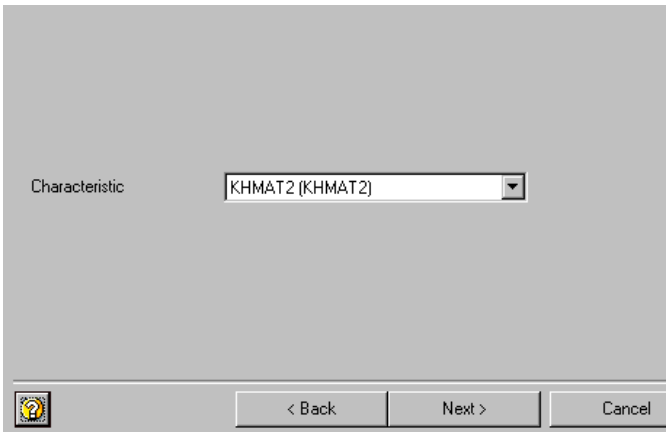
3. From the formula selecton screen, from the context menu select "New Variable".



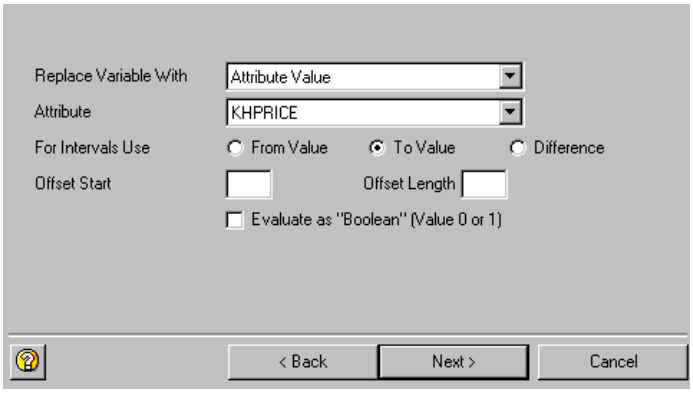
4. You will be taken to the formula wizard. On the first screen, you will need to select processing type ("Replacement Path"), as well as a technical name and description.



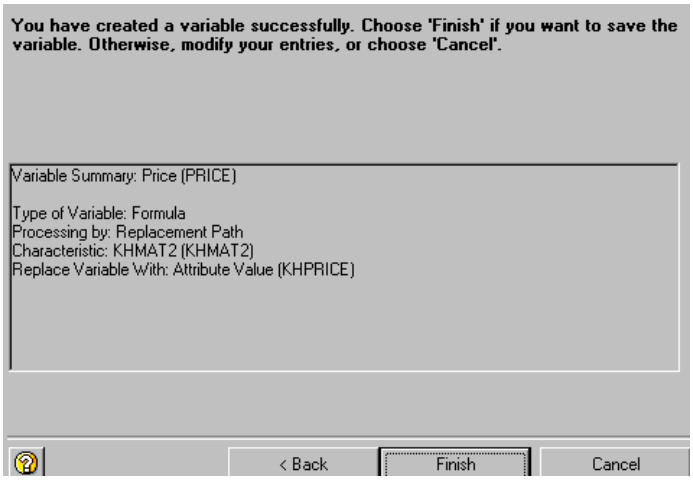
5. On the next screen, select the base characteristic (KHMAT2, your "Material" characteristic InfoObject).



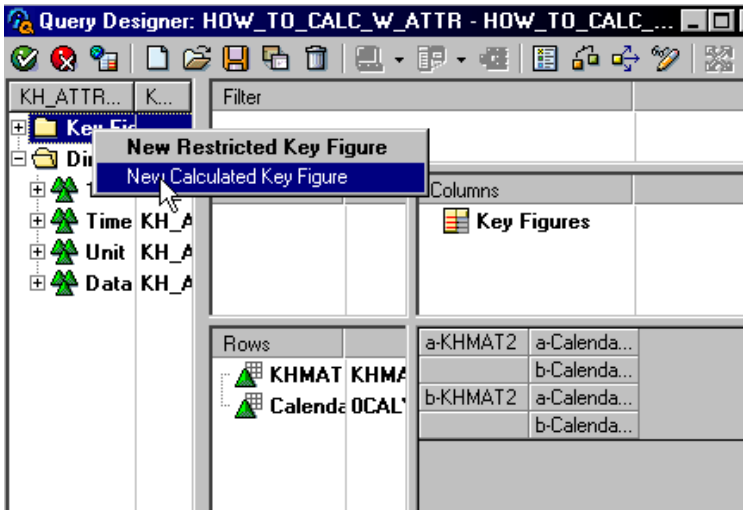
6. One more screen, and you are asked to select the replacement object ("Attribute Value"), and then the respective attribute ("KHPRICE, the "Price").



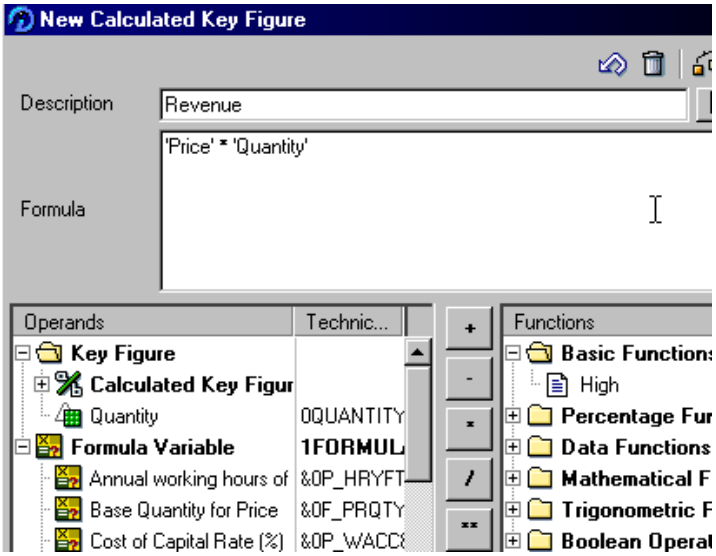
7. The next screen will confirm, that you created the replacement variable successfully, and that you are now ready to use it.



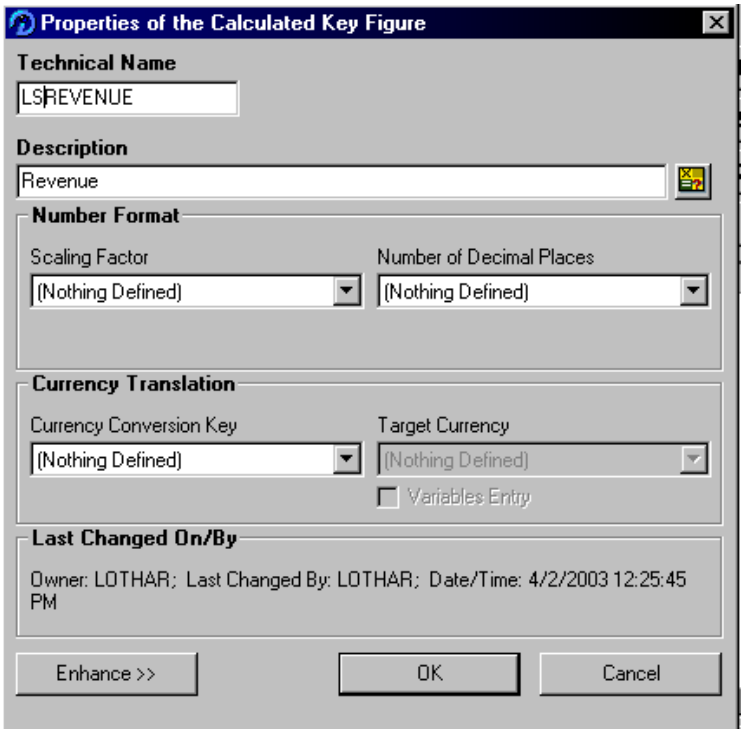
8. Now you are ready to create the Calculated Key Figure (CKF) for "Revenue". To do so, select "New CKF" from the context menu of the left hand side (!) Key Figure selection in the BEx Query Designer.



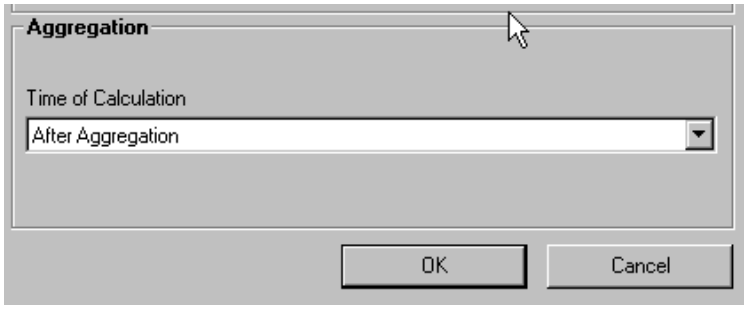
9. Define the formula. Drag and drop in "Quantity" and the (newly defined) formula variable "Price". Choose the mathematical operation "*" (multiplication). Check, save and leave the CKF definition.



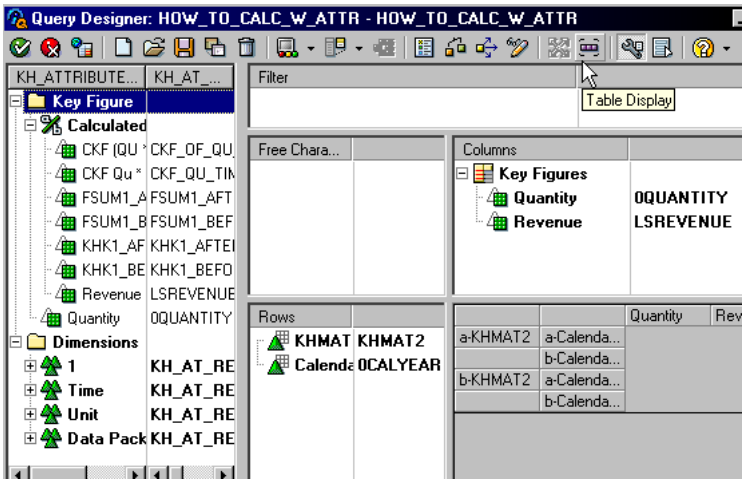
10. BEx will take you to the property definition screen of the newly defined CKF. Here, please maintain the Technical Name. Then push the "Enhance" button, in the lower left corner.



11. You now can pick the aggregation settings. Please ensure, that the default "After Aggergation" is selected.



12. Drag and drop the Key Figures into the columns ("Quantity" and "Revenue" in our case).



13. Execute the Query. You wil see, that the correct results are displayed:
- In 2001, there were 5 units sold of M1, with a price of $10 each, resulting in $50 sales.
- In 2001 and 2002, there were 11 units of M1 sold in total, resulting in $100 sales.

KHMAT2	Calendar year	Quantity	Revenue
M1	2001	5.000 PC	$ 50.00000 PC
	2002	6.000 PC	$ 60.00000 PC
	Result	**11.000 PC**	**$ 110.00000 PC**
M2	2001	7.000 PC	$ 140.00000 PC
	2002	8.000 PC	$ 160.00000 PC
	Result	**15.000 PC**	**$ 300.00000 PC**
Overall Result		**26.000 PC**	**$ 410.00000 PC**

14. When you navigate through the query, the results stay correct. In this example, we are aggregating over all years.

KHMAT2	Quantity	Revenue
M1	11.000 PC	$ 110.00000 PC
M2	15.000 PC	$ 300.00000 PC
Overall Result	**26.000 PC**	**$ 410.00000 PC**

15. Also when you display sales per year, the results are still correct:
- In 2001, 5 units of MW had been sold for $10 each, and 7 units had been sold for $20 each. That means, overall 12 units had been sold, generating $190 in total.

Calendar year	Quantity	Revenue
2001	12.000 PC	$ 190.00000 PC
2002	14.000 PC	$ 220.00000 PC
Overall Result	**26.000 PC**	**$ 410.00000 PC**