Activity A07_Capital_Expenditure

In this activity we open a pre-built model which has one tab.

Examine the Multi Currency Revenue tab.

1. Open A07_Capital_Expenditure_Before.cdd (which is supplied with the activity resources) and **Save As** A07_Capital_Expenditure.cdd.

Examine the single tab of this cdd file. It should look like the screen shot below.
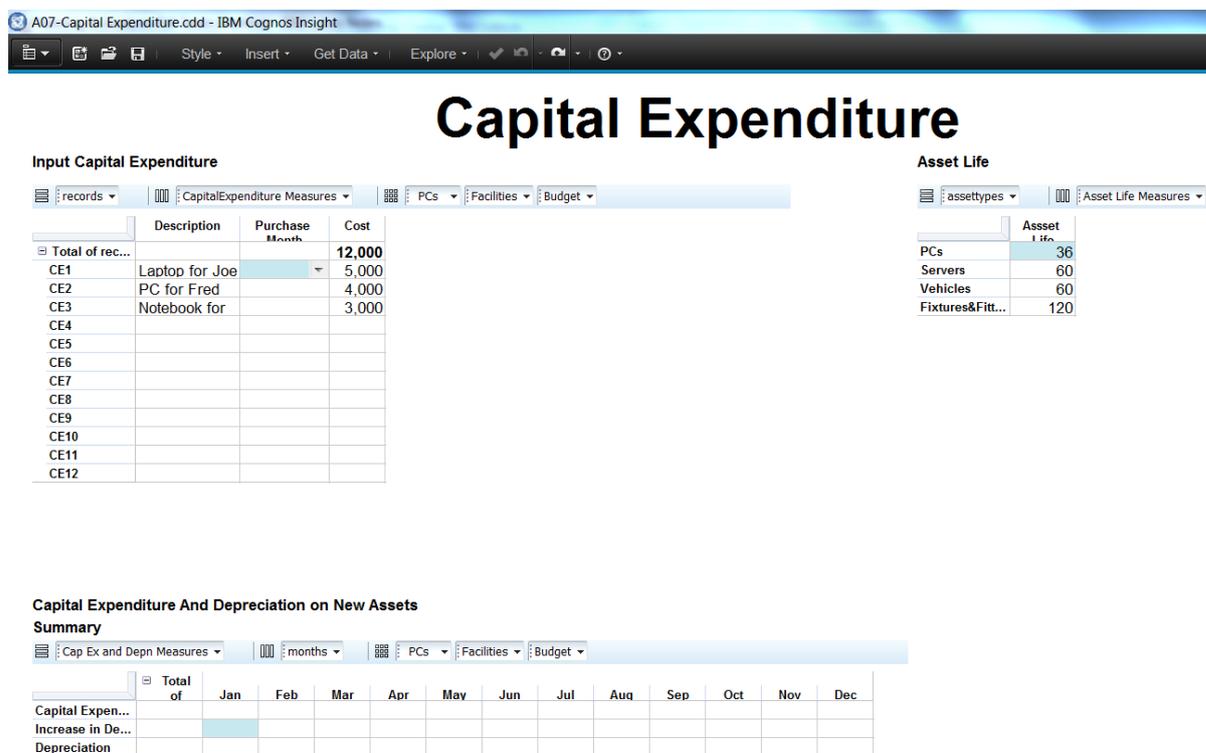
Examine the contents of the Capital Expenditure tab

Input Capital Expenditure

Top left we have an input cube designed to make it easy for users to enter and review the 3 pieces of information required for calculating the capital expenditure and depreciation of the asset

- Description
- Purchase month
- Cost

Note that the Purchase Month item has a drop down associated with it but as yet there are no items to select from.

We will populate this drop down using the months dimension.

Asset Life

The top right holds the assumptions cube with the asset life for the 4 asset types which have been pre-defined.

Capital Expenditure and Depreciation of the New Assets Summary

At the bottom is the summary of the Capital Expenditure and Depreciation of the new assets. At this point there is no calculated data.

Populate the Purchase Month drop down.

2. There are a number of ways to access the Edit dimension functionality. Previously we have used the Data Pane. Here we will access it directly from the view in the workspace. Right click on row bar on the Input Capital Expenditure view.

Input Capital Expenditure

	Description	Purchase Month	Cost
⊟ Total of rec...			**12,000**
CE1	Laptop for Joe		5,000
CE2	PC for Fred		4,000
CE3	Notebook for		3,000
CE4			
CE5			
CE6			
CE7			
CE8			
CE9			
CE10			
CE11			
CE12			

Toolbar: records ▾ | CapitalExpenditure Measures ▾ | PCs ▾ | Facilities ▾ | Budget ▾

3. Select Edit dimension

We see that a pick list attribute has been created for us.

Note: Pick lists should only be created on the measures dimension. In this example it was done by right clicking on the top bar of the Edit Dimension dialog (where the word Format appears), selecting New Attribute, type text and calling it Pick List)

We also see that the pick list type of **dimension** has been typed in to the cell but no dimension specified yet.

There are 3 types of pick list available, **dimension, subset and static**. These are fully described in the product documentation.

4.   We will now complete the dimension pick list for the Purchase Month item by typing in the dimension name months, ensuring that the semi colon is still in place between the two words as follows - **dimension:months**

Note: It is vital to use the correct name for the dimension. If you are unsure then open the data pane and check. For the cdd file supplied the dimension is called months (it is not case sensitive)

5.   Select OK.
6.   On the view we can now test the pick list and enter the required data. Select Jan as the Purchase Month for Laptop for Joe and PC for Fred. Select Mar for the Notebook for Anne.

7. Commit the data to complete this task.

Calculate the Capital Expenditure.

We will now take the data from the **Input Capital Expenditure** cube and use it to calculate the Capital Expenditure for the asset type. The data will be accumulated into the correct month using the Purchase Month. Where there are multiple entries for the same month/asset type/department and Budget line (as we have for Jan/PC's/Facilities/Budget) the data will be added into the one cell.

8. Right click on the **Capital Expenditure** item of the Capex and Depn Measures dimension in the Capital Expenditure and Depreciation of the New Assets Summary view.
9. Select Create Cube Calculation.
10. Name it **Capital Expenditure** and select OK
11. Select Import term.
12. Name it **CapExDetail** and select OK
13. Select the CapitalExpenditureDetail cube in the source.

We will use the attribute pick list that hold the months dimension as a virtual dimension in this link. Links using a virtual dimension on the source cube are referred to as **Accumulation Links**.

14. Right click on the CapitalExpenditure Measures dimension of the source to expose the virtual dimension **months**
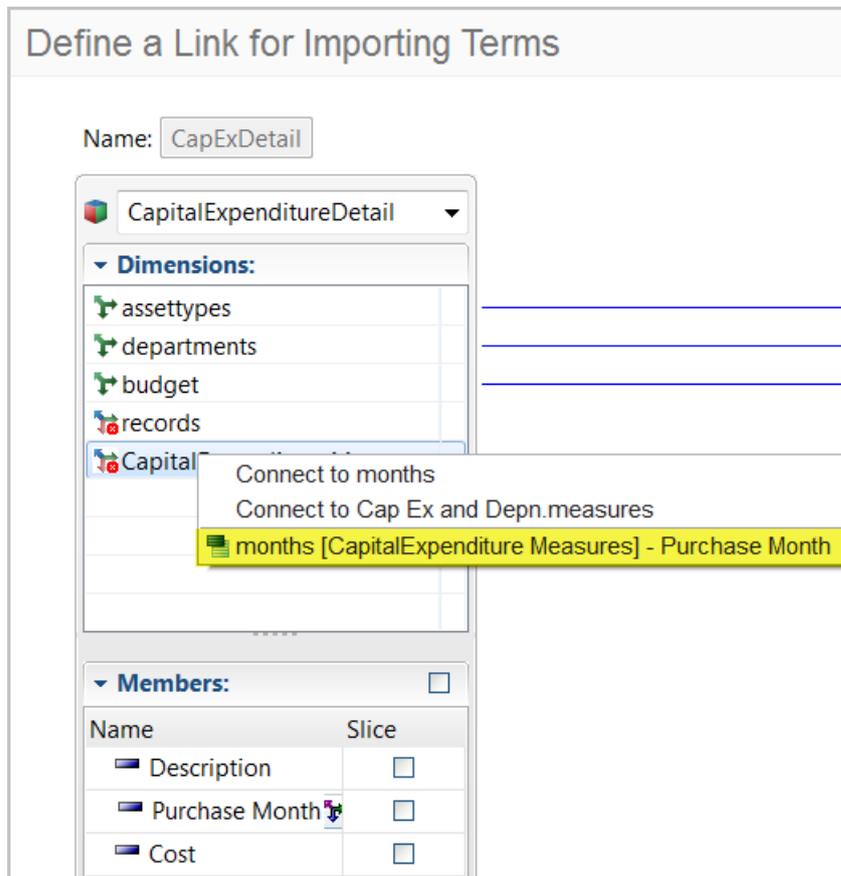
15. Select this to make it available to the link. Note: If you are not able to select it directly then use the keyboard down arrow to move down through the 3 items to the months attribute. This will be fixed in a future release

16. Click onto this new virtual dimension and see that the members are the months Jan to Dec plus the Total of Months consolidated item. As we selected dimension as the pick list type we get the full dimension. It is possible to use a subset to define a pick list as well and that could be used here as a virtual dimension. Static pick lists have the items typed directly into the dimension editor and do not exist anywhere else. As such they cannot be used as a virtual dimension.
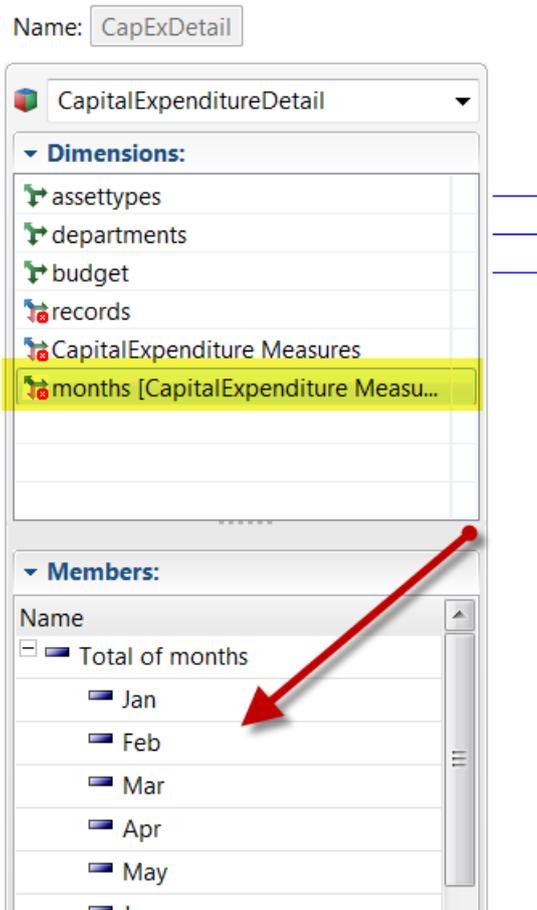
17. Map this virtual months dimension in the source to the Months dimension in the target. Select Automatic as the mapping type

Define a Link for Importing Terms

Name: CapExDetail

18. On the source side select all from the records dimension.
19. Select Cost from the CapitalExpenditure Measures.
20. On the Target side select Capital from the Cap Ex and Depn Measures dimension.
21. Select OK to save the import link.

Define a Link for Importing Terms

Name: CapExDetail

CapitalExpenditureDetail

Dimensions:
- assettypes
- departments
- budget
- months [CapitalExpenditure Measure...]
- records
- CapitalExpenditure Measures

Cap Ex and Depn

Dimensions:
- assettypes
- departments
- budget
- months
- Cap Ex and Depn Measures

Members:

Name	Slice
Description	☐
Purchase Month	☐
Cost	☑

Members:

Name	Slice
Capital	☑
Increase in Depn	☐
Depreciation	☐

22. In the Cube Calculation dialog drag this import link into the leaf level expression

Cap Ex and Depn: Capital Expenditure

Define a new expression for:
Capital Expenditure
Cap Ex and Depn Measures

Import terms...
- Imported values
  - CapExDetail
- assettypes
- months

Terms | Aggregation | Simple | Functions

Expression: ☐ Combine leaf and

Leaf-level expression | Consolidated-level expressi

=LINK('CapExDetail')

23. Select OK to save the Cube Calculation.
24. Look at the new data in the Capital Expenditure and Depreciation of the New Assets Summary view. You should see that the cost for the two items planned for purchase in Jan (4000+5000=9000) appears as a single value in the summary cube. The costs have been accumulated via the import link using the virtual dimension of months.

Input Capital Expenditure

| records ▾ | CapitalExpenditure Measures ▾ | | PCs ▾ | Facilities ▾ | Budget ▾ |

	Description	Purchase Month	Cost
Total of records			**12,000**
CE1	Laptop for Joe	Jan	5,000
CE2	PC for Fred	Jan	4,000
CE3	Notebook for Anne	Mar	3,000
CE4			
CE5			
CE6			
CE7			
CE8			
CE9			
CE10			
CE11			
CE12			

Capital Expenditure And Depreciation on New Assets Summary

| Cap Ex and Depn Measures ▾ | months ▾ | | PCs ▾ | Facilities ▾ | Budget ▾ |

	Total of months	Jan	Feb	Mar	Apr	
Capital Expenditure	12,000	9,000	0	3,000	0	
Increase in Depn						
Depreciation						

Calculate the increase in depreciation for the assets.

25. Right click the Increase in Depn item and select Create Cube Calculation.
26. Name the cube calculation **Increase in Depn**.
27. Drag the Capital Expenditure item from the Cap Ex and Depn Measures dimension into the leaf level expression.
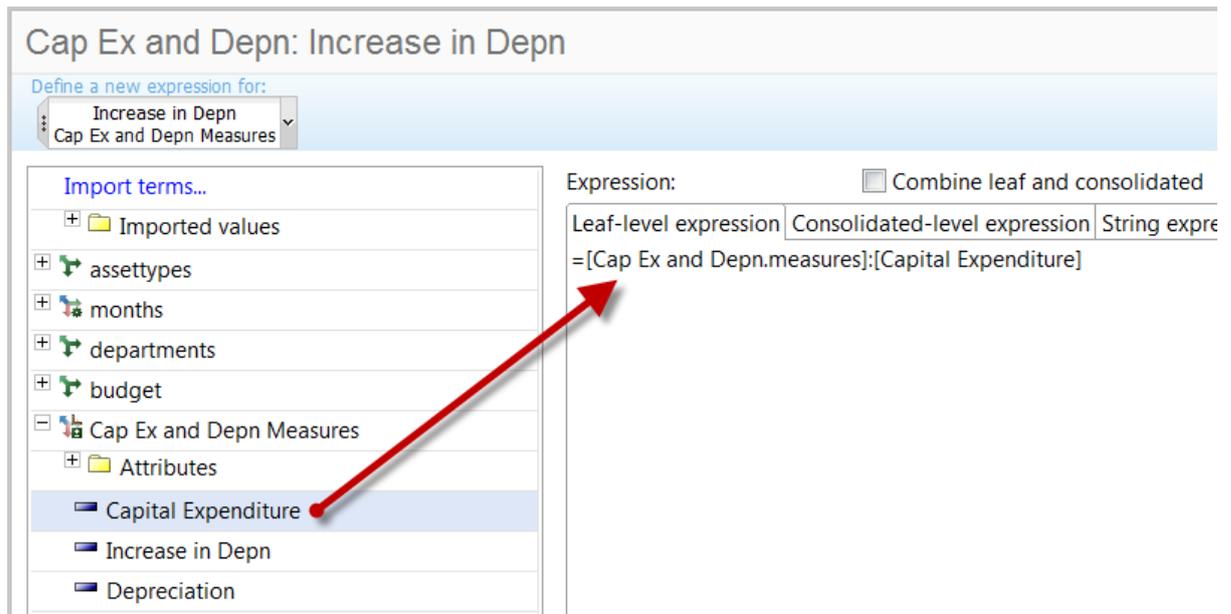
We now want to bring the asset life into this calculation.

28. Create and Import term and name it **Asset life** and select OK.
29. Select the Asset Life cube on the source. Assets types match automatically as they are the same dimension in both cubes.
30. Select Asset Life from the Asset Life Measures dimension.
31. On the Target select all Months, all Departments, Budget from the Budget dimension and Increase in Depn from the Cap Ex and Depn Measures dimension.

Define a Link for Importing Terms

Name: Asset Life

32. Select OK
33. Complete the cube calculation as below.

=[Cap Ex and Depn.measures]:[Capital Expenditure] / LINK('Asset Life')

34. Click OK.
35. Review the Capital Expenditure and Depreciation of the New Assets Summary view. The result should look as follows:

Capital Expenditure And Depreciation on New Assets Summary

	Total of months	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Capital Expenditure	12,000	9,000	0	3,000	0	0	0	0	0	
Increase in Depn	333	250	0	83	0	0	0	0	0	
Depreciation										

Prepare the months dimension attributes for working with a function

Cognos Insight has some time intelligence built in. To use the function we must manually add some time attributes which would automatically be added into a time dimension in Performance Modeler.

36. Open the Data Pane and locate the months dimension.
37. Right click and select Edit.
38. You are going to populate the Next Period, Previous Period, First Period and Last period attributes. To speed up this process open Excel and autofill a column with Jan to Dec.
39. Cut and paste from excel Feb to Dec and place in the **Next Period** for Jan to Nov.
40. Cut and paste from excel Jan to Nov and place in the **Previous Period** for Feb to Dec
41. In the Total of months cell select Jan for the **First Period**
42. In the Total of months cell select Dec for the **Last Period**

The result will look as below.

Edit Dimension - months

Right-click a header to edit the attributes. Right-click a member to change the order of members or to nest members under other members.

Rename dimension months

| Name	Next Period	Previous Period	First Period	Last Period
Total of months			Jan	Dec
Jan	Feb			
Feb	Mar	Jan		
Mar	Apr	Feb		
Apr	May	Mar		
May	Jun	Apr		
Jun	Jul	May		
Jul	Aug	Jun		
Aug	Sep	Jul		
Sep	Oct	Aug		
Oct	Nov	Sep		
Nov	Dec	Oct		
Dec		Nov		

43. Close the months dimension.

Calculate the Depreciation using a function

44. Right click on the Depreciation item in the Capital Expenditure and Depreciation of the New Assets Summary view and select Create Cube Calculation.
45. Name the Cube Calculation **Depreciation**.and select OK
46. Click on the Function tab and open the Time Based functions.
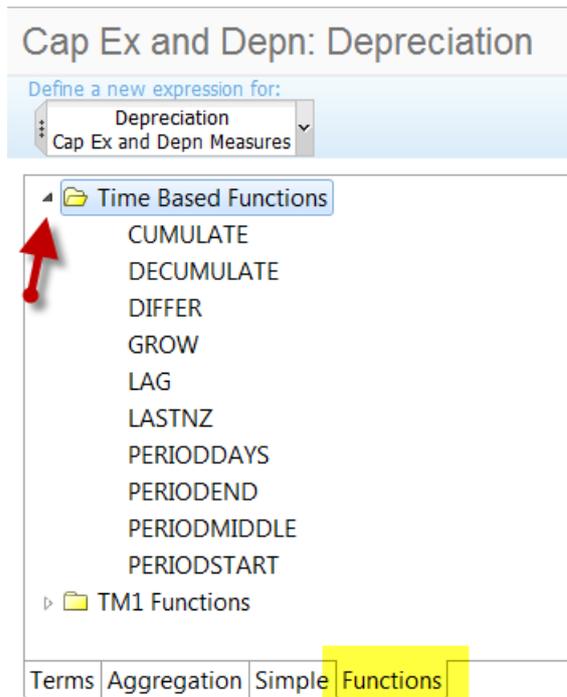
47. Drag Cumulate into the Leaf level expression.
48. Click back to the Terms tab and drag the Increase in Depreciation item from the Cap Ex and Depn Measures dimension to replace the place holder "input"

=CUMULATE([Cap Ex and Depn.measures]:[Increase in Depn])
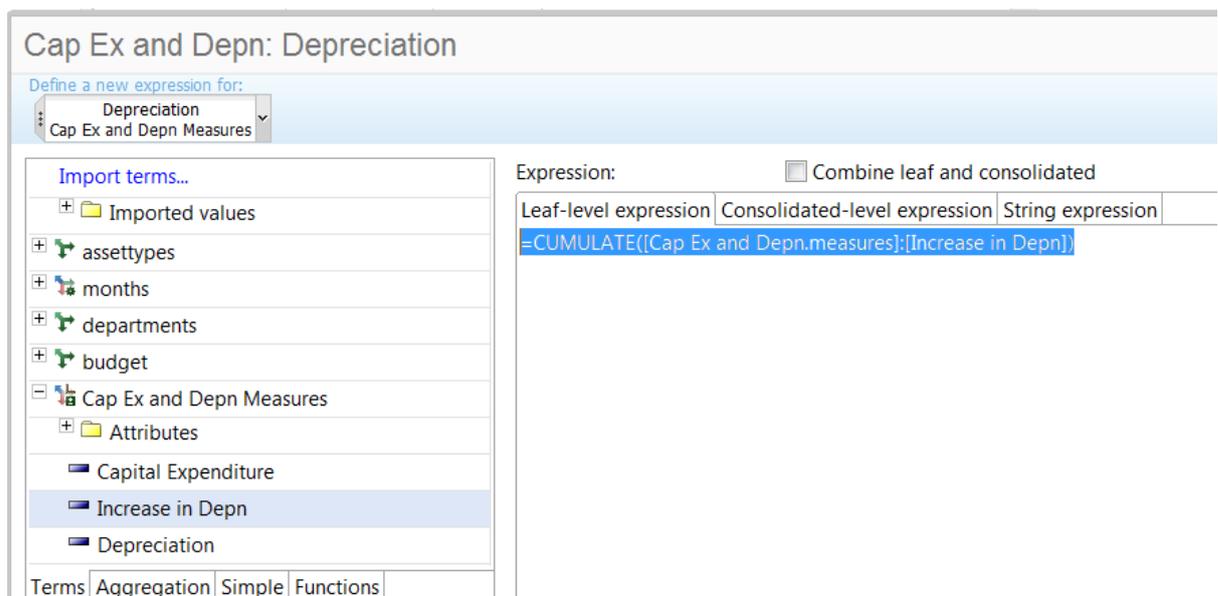
49. Click OK
50. The result should appear as below: See how the Depreciation is the accumulation of the previous months as you move across the months timescale.

Capital Expenditure And Depreciation on New Assets
Summary

Cap Ex and Depn Measures ▾ | months ▾ | PCs ▾ Facilities ▾ Budget ▾

	⊟ Total of months	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oc
Capital Expenditure	12,000	9,000	0	3,000	0	0	0	0	0	0	
Increase in Depn	333	250	0	83	0	0	0	0	0	0	
Depreciation	3,833	250	250	333	333	333	333	333	333	333	

51. You can test with other test data as required using different asset types
52. Save the cdd file to complete the activity.