

Combination-Based Planning

If planners are in charge of, for example, several product location combinations, they might check and adjust the key figure values for each combination one by one. Therefore, it would be beneficial to have only one combination in the “Planning” worksheet, where the data is reviewed and adjusted. Using the button “Save and Next” it’s possible to save the changes and get the next combination shown in the worksheet directly.

The list of combinations which need to be planned are included in a second worksheet named “List”. It’s possible to include the list as an Excel worksheet or, as we show it in our example, a planning view can be created including the list of combinations.

1. HOW TO START

In this example, only the combinations where no Consensus Demand is planned yet within the next 3 months should be included in the list. Therefore, you need to set up a planning view for the worksheet named “List” with following value-based filter:

Value-Based Filter

Filter: (Ad Hoc Filter)
Add
Update
Delete
Organize

Monthly
Rolling
JAN 2021
MAR 2021
3 Periods

Consensus Demand without Promotion
Is Empty
In At Least One Period

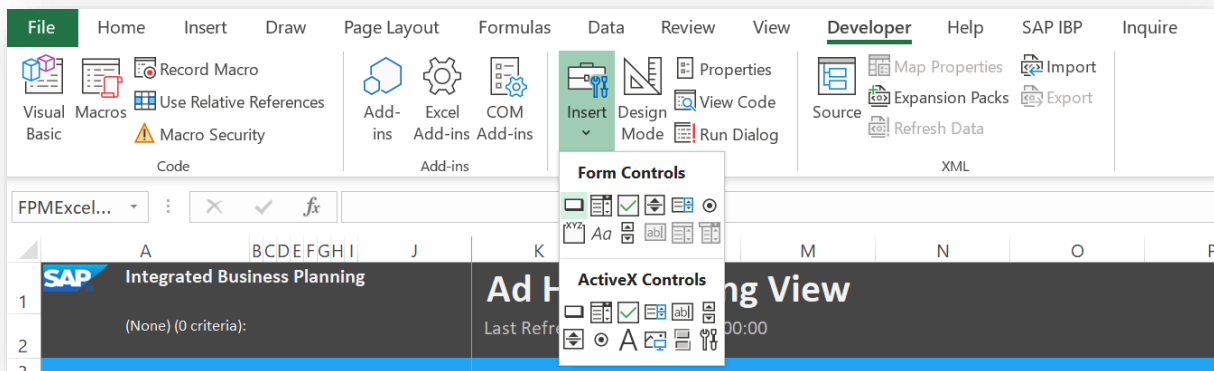
In this case, the key figure “Consensus Demand without Promotions” is shown at Product ID and Location ID level and monthly time settings are selected.

Product ID	Location ID	Key Figure	JAN 20	FEB 20	MAR 20
HT_001	HD_DC_CA_E	Consensus Demand without Promotion		60	21
	HD_DC_US_E	Consensus Demand without Promotion		0	
HT_002	HD_DC_US_W	Consensus Demand without Promotion			
	HD_DC_CA_E	Consensus Demand without Promotion			
	HD_DC_FR	Consensus Demand without Promotion			
HT_003	HD_DC_US_E	Consensus Demand without Promotion			
	HD_DC_US_W	Consensus Demand without Promotion			
	HD_DC_CA_E	Consensus Demand without Promotion			
	HD_DC_FR	Consensus Demand without Promotion			
	HD_DC_US_E	Consensus Demand without Promotion			
	HD_DC_US_W	Consensus Demand without Promotion			

After creating the list of planning combinations, you need to create the planning view for the planning tasks (in our example “Planning” worksheet). You can select the same attribute and time settings as for the combinations list but include further key figures which are needed for the planning tasks.

Product ID	Location ID	Key Figure	JAN 20	FEB 20	MAR 20	APR 20	MAY 20	JUN 20	JUL 20	AUG 20	SEP 20	OCT 20	NOV 20	DEC 20
HT_001	HD_DC_CA_E	Consensus Demand without Promotion		1.652	50	250	6.944	100	125	100	100	100	300	5.625
		Demand Planning Qty	0	0	343	0	0						0	14
		Consensus Demand	0	17.317	50	250	6.944	100	125	100	100	100	300	5.625
		Delivered Qty Adjusted	2.325	2.100	2.325	1.710	1.479	1.437	43.242	45	0	0	100.000	0
		Actuals Revenue												
		Confirmed Qty												

As a next step, insert four VBA buttons to the “Planning” worksheet (in the “Developer” tab of Microsoft Excel in the “Controls” section, select “Insert” and choose the button icon from “Form Controls”).



The buttons are used for the following:

- Refresh Worklist: refresh the planning view of the worksheet “List” and show the first combination of the list in the worksheet “Planning” (starting point)
- Previous Item: open the previous combination from the list
- Next Item: open the next combination from the list
- Save and Next: save the changes, and open the next combination from the list

			<div>Refresh Work List</div> <div>Previous Item</div> <div>Next Item</div> <div>Save and Next</div>											
Product ID	Location ID	Key Figure	JAN 20	FEB 20	MAR 20	APR 20	MAY 20	JUN 20	JUL 20	AUG 20	SEP 20	OCT 20	NOV 20	DEC 20
HT_001	HD_DC_CA_E	Consensus Demand without Promotion	100	1.652	9.000	1.000	6.944	100	125	100	100	100	300	5.000
		Demand Planning Qty	0	0	343	0	0						0	14
		Consensus Demand	100	17.317	9.000	1.000	6.944	100	125	100	100	100	300	5.000
		Delivered Qty Adjusted	2.325	2.100	2.325	1.710	1.479	1.437	43.242	45	0	0	100.000	0
		Actuals Revenue												
		Confirmed Qty												

After inserting the buttons and adjusting the captions, the VBA code for each button needs to be added into the Microsoft Excel Object “Sheet2 (Planning)”, as described in the following chapters.

2. REFRESH WORKLIST

```
Private IBPAutomationObject As Object
Private position As Range
```

```
Private Sub RefreshList_Click()
```

```

Dim attributes() As String
Dim rptID As String
Dim topLeftCell As String
On Error GoTo ErrorHandler:
    If IBPAutomationObject Is Nothing Then Set IBPAutomationObject =
        Application.COMAddIns("IBPXLClient.Connect").Object
    rptID = IBPAutomationObject.GetActiveReportName(ActiveSheet)
    If rptID = "" Then
        MsgBox ("The active worksheet has no planning view.")
        Exit Sub
    End If
    ActiveWorkbook.Sheets("List").Activate
    Call IBPAutomationObject.Refresh
    topLeftCell = IBPAutomationObject.getDataTopLeftCell(ActiveSheet, rptID)
    Set position = ActiveSheet.Range(topLeftCell)
    attributes = IBPAutomationObject.GetAttributeValues(position)
    Call IBPAutomationObject.SetFilterValues(attributes, ActiveWorkbook.Sheets("Planning"))
    ActiveWorkbook.Sheets("Planning").Activate
    Exit Sub
ErrorHandler:
    'Implement an error handling to help the user to understand what went wrong
    MsgBox Err.Description, vbOKOnly, "Microsoft Excel: Custom VBA code"
End Sub

```

Code explained row by row:

Please note: Code lines which already have been explained in the tutorial for use case 1.1 “Create Customized Navigation Patterns” are not explained in detail again.

rptID = IBPAutomationObject.GetActiveReportName(ActiveSheet)

With the API GetActiveReportName it is possible to check whether the ActiveSheet contains a planning view or not. This information is needed for the API getDataTopLeftCell, which is explained below.

```

If rptID = "" Then
    MsgBox ("The active worksheet has no planning view.")
    Exit Sub
End If

```

If the return value is "" the worksheet contains no planning view, and an error message is shown.

ActiveWorkbook.Sheets("List").Activate
 Activate the worksheet named “List”

Call IBPAutomationObject.Refresh
 Refresh the active worksheet (“List”) to get the most recent information

topLeftCell = IBPAutomationObject.getDataTopLeftCell(ActiveSheet, rptID)
 Determine the top-left cell of the data area within the planning view of the active worksheet (“List”)

Set position = ActiveSheet.Range(topLeftCell)
 Remember the first cell in the data area of the planning view
 To be able to use the same position as reference across all VBA methods, the variable is declared as global variable outside the function.

attributes = IBPAutomationObject.GetAttributeValues(position)
Call IBPAutomationObject.SetFilterValues (attributes, ActiveWorkbook.Sheets("Planning"))
 Determine the attribute values of that cell and pass it as filter criteria to the planning view “Planning”

ActiveWorkbook.Sheets("Planning").Activate
 Activate the worksheet named “Planning” to be able to start working there

3. PREVIOUS ITEM AND NEXT ITEM

```
Private Sub NextItem_Click()
    Dim attributes() As String
    Dim list As Worksheet
    If position Is Nothing Then
        MsgBox "Please first refresh the worklist, to initialize the planning view.", vbOKOnly, "Microsoft Excel: Custom VBA code"
        Exit Sub
    End If
    On Error GoTo ErrorHandler:
        If IBPAutomationObject Is Nothing Then Set IBPAutomationObject = Application.COMAddIns("IBPXLCClient.Connect").Object
        Set position = position.Offset(1, 0)
        attributes = IBPAutomationObject.GetAttributeValues(position)
        Call IBPAutomationObject.SetFilterValues(attributes, ActiveWorkbook.Sheets("Planning"))
        Exit Sub
ErrorHandler:
    'Implement an error handling to help the user to understand what went wrong
    MsgBox Err.Description, vbOKOnly, "Microsoft Excel: Custom VBA code"
End Sub

Private Sub PreviousItem_Click()
    Dim attributes() As String
    Dim list As Worksheet
    If position Is Nothing Then
        MsgBox "Please first refresh the worklist, to initialize the planning view.", vbOKOnly, "Microsoft Excel: Custom VBA code"
        Exit Sub
    End If
    On Error GoTo ErrorHandler:
        If IBPAutomationObject Is Nothing Then Set IBPAutomationObject = Application.COMAddIns("IBPXLCClient.Connect").Object
        Set position = position.Offset(-1, 0)
        attributes = IBPAutomationObject.GetAttributeValues(position)
        Call IBPAutomationObject.SetFilterValues(attributes, ActiveWorkbook.Sheets("Planning"))
        Exit Sub
ErrorHandler:
    'Implement an error handling to help the user to understand what went wrong
    MsgBox Err.Description, vbOKOnly, "Microsoft Excel: Custom VBA code"
End Sub
```

Code explained row by row:

The code which is assigned to the “Previous Item” and “Next Item” buttons does the following:

```
If position Is Nothing Then
    MsgBox "Please first refresh the worklist, to initialize the planning view.", vbOKOnly, "Microsoft Excel: Custom VBA code"
    Exit Sub
```

End If

Check if the worklist was refreshed and the position of the first combination was initialized

Set position = position.Offset(1, 0) or Set position = position.Offset(-1, 0)

Move the “position” range one row down or up

attributes = IBPAutomationObject.GetAttributeValues(position)

Call IBPAutomationObject.SetFilterValues (attributes, ActiveWorkbook.Sheets("Planning"))

Determine the attribute values of the changed position and pass it as filter criteria to the planning view “Planning”

4. SAVE AND NEXT

```
Private Sub SaveAndNext_Click()  
    If position Is Nothing Then  
        MsgBox "Please first refresh the worklist, to initialize the planning view.", vbOKOnly, "Microsoft Excel:  
        Custom VBA code"  
        Exit Sub  
    End If  
    On Error GoTo ErrorHandler:  
        If IBPAutomationObject Is Nothing Then Set IBPAutomationObject =  
        Application.COMAddIns("IBPXLClient.Connect").Object  
        IBPAutomationObject.SaveData  
        NextItem_Click  
        Exit Sub  
ErrorHandler:  
    'Implement an error handling to help the user to understand what went wrong  
    MsgBox Err.Description, vbOKOnly, "Microsoft Excel: Custom VBA code"  
End Sub
```

Code explained row by row:

In this code, we additionally call the API SaveData before calling "NextItem_Click" to get the next combination shown in the "Planning" planning view.
For more information, see the SAP Help portal at [SaveData](#).

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