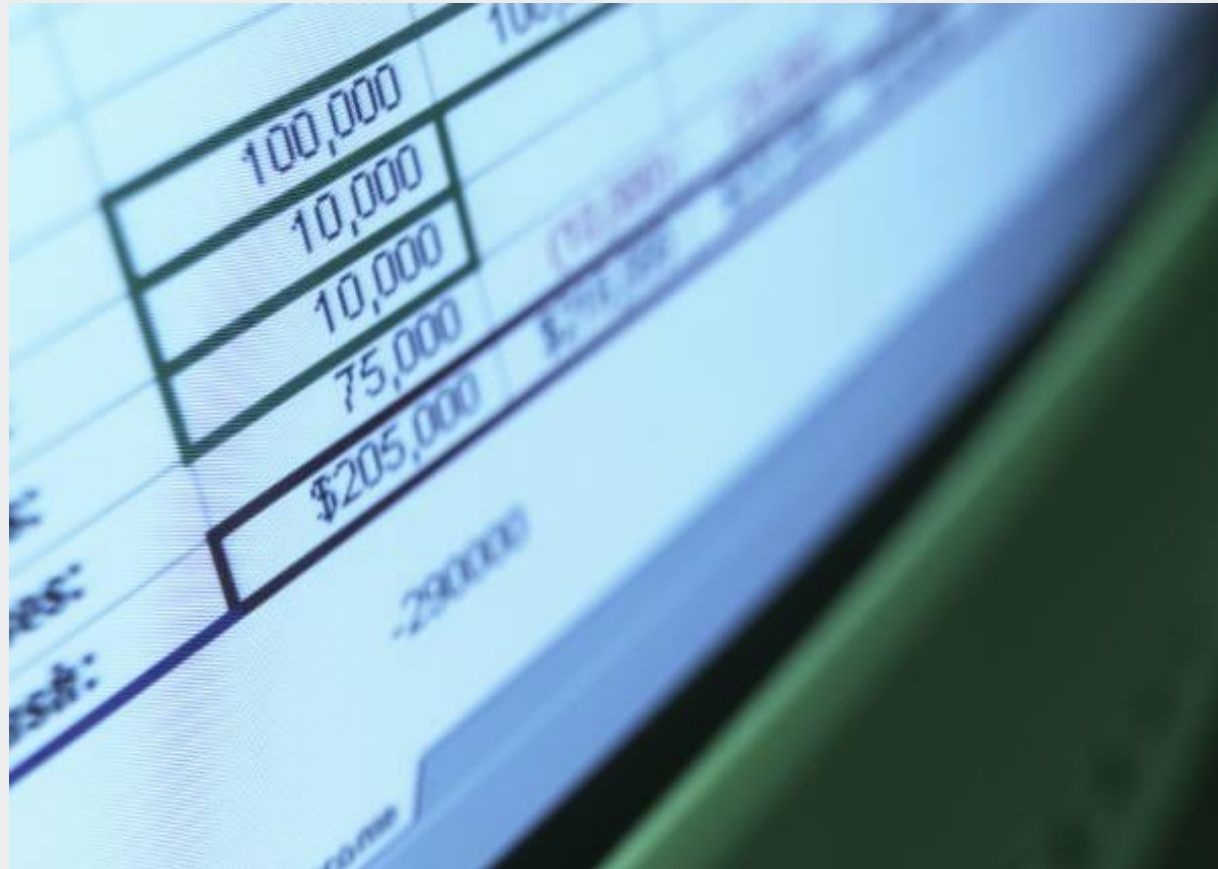


# SAP BW

Lesson 09: Enterprise Reporting Part 3 RRI



# BI Enterprise Reporting... Contd...



# BI Document Integration



# Introduction

- It is of an enormous advantage to be able to access additional documentation within a report.
- Additional information about the query, individual characteristic values, as well as combinations of characteristic values is extremely useful.
- When defining characteristic values, it is often desirable to link technical drawings, detailed pictures or other files as documentation.



# Document Browser

- Documents of all types can be created and edited from the Document Browser

The diagram illustrates the process of creating and editing documents. A document icon is shown with an arrow pointing to a dashed box labeled "Document Browser". Another arrow points from the "Document Browser" to a data table. A curved arrow also points from the data table back to the document icon, indicating a feedback loop.

**Sales by Div/Material**

Display as: Table

Columns:

- Key figures
  - Incoming Orders
- Rows
  - Distribution Channel
  - Division
  - Material
- Free characteristics
  - Sales Organization

Distribution Channel	Division	Material	Incoming Orders
Overall			40.983
10	Final customer sales	Result	40.983
	Cross-division	Result	9.445
		P-101 Pump PRECISION 101	2.676
		p-102	1.925
		p-103	2.585
		p-104	2.257.579
	Pumps	Re: 31.537	
		Properties	3.165
		Documents	
		Sort	
		P-103 Pump PRECISION 1	
		P-104 Pump PRECISION 1	



# Document Integration

- For metadata, master data and transaction data, you can define and even link one or more documents in various formats, versions and languages.
- SAP distinguishes between logical documents, which are linked to BI objects using attributes (for example, object type and object name), and physical documents which belong to a specific logical document as individual characteristic values (versions) and which present meta-descriptions for individual files using their attributes (for example, language and format). You can store the individual files either on an SAP database or on an external content server using an HTTP interface.
- In the *Administrator Workbench*, you choose *Documents* to reach the *navigation* window for the three document classes *Metadata*, *Master Data*, and *InfoProvider Data*



# Metadata Document Class

- You can define documents for metadata for the following BW objects:
- You can define additional explanations for individual structural components, for changes that have been made and the reasons for the changes, for historical developments and so on here.
- InfoObject
- InfoCube
- InfoSet
- ODS Object
- Query



# Metadata Document Class

**1.** Object Type

**2.** Symbol: Create

Note that this is a navigation attribute of the division

**3.** Create New Document  
Tab page: Shared

The screenshot shows the SAP Administrator Workbench: Documents interface. The 'Object Type' field is set to 'I0BJ' and the 'Object name' is 'OMATERIAL\_ODMISION'. The 'Symbol: Create' icon is highlighted. The 'Create New Document' dialog is open, showing the 'General' tab with fields for 'Doc. Class' (BW: Physical Class Metadata), 'Name', 'Description', and 'Mime Type' (Simple Text). The 'Start Editor' button is visible at the bottom.

Type	Name	Obj. Doc.	Agent	Title	Change Time	Changed by
Navigation	Navigation	X		Navigation	09.07.2002 12:18:14	BECKER
General	General			General	12.09.2002 16:10:05	BECKER





# Metadata Document Class

The image shows a sequence of three overlapping screenshots of the SAP 'Create New Document' dialog, illustrating the steps to create a Metadata Document Class.

**Step 4:** The 'Log. Doc. Properties' tab is selected. The 'Attribute' table is populated with the following data:

Attribute	value
Object name	0Material__ODIVISION
Object Type	Info Object
Online Documentation	Yes

**Step 5:** The 'Technical Information' tab is selected. The 'Doc. Class' is set to 'BW\_PH\_META' and the 'Log.Doc. Class' is set to 'BW\_LO\_META'.

**Step 6:** The 'Start Editor' button is clicked, opening a Notepad window to define the document text.



# Master Data Document Class

**1. Define the characteristic and characteristic value**

**2. Symbol: Create**

**3. Create New Document Tab page: Shared**

The screenshot shows the SAP Administrator Workbench: Documents interface. The left sidebar contains a tree view with 'Metadata' expanded, showing 'Master Data' and 'InfoProvider'. The main area displays a table of documents for Material 'Pumps' (2). The table has columns: Name, Description, Agent, Title, Change Time, and Change By. The first row is 'SantaFeStooc.bmp' with description 'Picture as Example' and change time '00.07.2002 12:18:14 BECK'. The second row is 'Infotext Char. Value GR00 BuB05' with description 'Infotext Char. GR00 BW305 Document Integration' and change time '12.09.2002 16:14:05 BECK'. A 'Create New Document' dialog box is open in the foreground, showing the 'General' tab. The 'Doc. Class' is set to 'BW: Physical Class Master Data'. The 'Name' field is empty. The 'Description' field is empty. The 'Mime Type' is set to 'Simple Text'. The 'Start Editor' button is at the bottom left of the dialog box.

Name	Description	Agent	Title	Change Time	Change By
SantaFeStooc.bmp	Picture as Example			00.07.2002 12:18:14	BECK
Infotext Char. Value GR00 BuB05	Infotext Char. GR00 BW305 Document Integration			12.09.2002 16:14:05	BECK

**Create New Document**

General | Log. Doc. Properties | Technical Information

Doc. Class: BW: Physical Class Master Data

Name:

Description:

Mime Type: Simple Text

Start Editor



# Master Data Document Class

The image shows a 'Create New Document' dialog box with three tabs: 'General', 'Log. Doc. Properties', and 'Technical Information'. The 'Log. Doc. Properties' tab is active, showing a table with the following data:

Attribute	Characteristic Value
Document Type	
Characteristic	0MATERIAL
Characteristic Value	P-100

Callout 4 points to this tab. Below it, the 'Technical Information' tab is shown, with fields for 'Doc. Class' (BW\_PH\_MAST) and 'Log.Doc. Class' (BW\_LO\_MAST). Callout 5 points to this tab. At the bottom of the dialog, there is a 'Start Editor' button. Callout 6 points to this button, with an arrow indicating the next step is to open a text editor. A 'Notepad' window is shown open, representing the editor.

**4. Tab page: Log. Doc. Properties**

**5. Tab page: Technical Information**

**6. Start the editor and define a text**



# InfoProvider Data Document Class

The screenshot displays the SAP Administrator Workbench: Documents interface. On the left, a navigation tree shows 'InfoProvider Data' selected. The main area contains a table with columns for 'InfoProviders', 'Key Figure', and 'Query'. A callout box labeled '1.' points to this table, stating: 'Combination of InfoProvider, Query, key figure and characteristic values possible'. Below the table, a 'Create New Document' dialog box is open, showing the 'General' tab. The 'Doc. Class' is set to 'BW Physical Class Transaction Data', and the 'Mime Type' is 'Simple Text'. A callout box labeled '2.' points to the 'Create' symbol in the toolbar, stating: 'Symbol: Create'. A callout box labeled '3.' points to the 'Create New Document' dialog box, stating: 'Create New Document Tab page: Shared'. The dialog box also has 'Log. Doc. Properties' and 'Technical Information' tabs, and a 'Start Editor' button at the bottom.

1. Combination of InfoProvider, Query, key figure and characteristic values possible

2. Symbol: Create

3. Create New Document Tab page: Shared



# InfoProvider Data Document Class

The screenshot illustrates the 'Create New Document' dialog in SAP, showing the process of defining an InfoProvider Data Document Class. The dialog has three tabs: General, Log. Doc. Properties, and Technical Information.

**4. Tab page: Log. Doc. Properties**  
Define characteristic values

Attribute	Characteristic Value
Key Figure	QINVCD_VAL
Query	T_BW30516A00
InfoProvider	T_SDC03
Sold-to Party	1001

**5. Tab page: Technical Information**

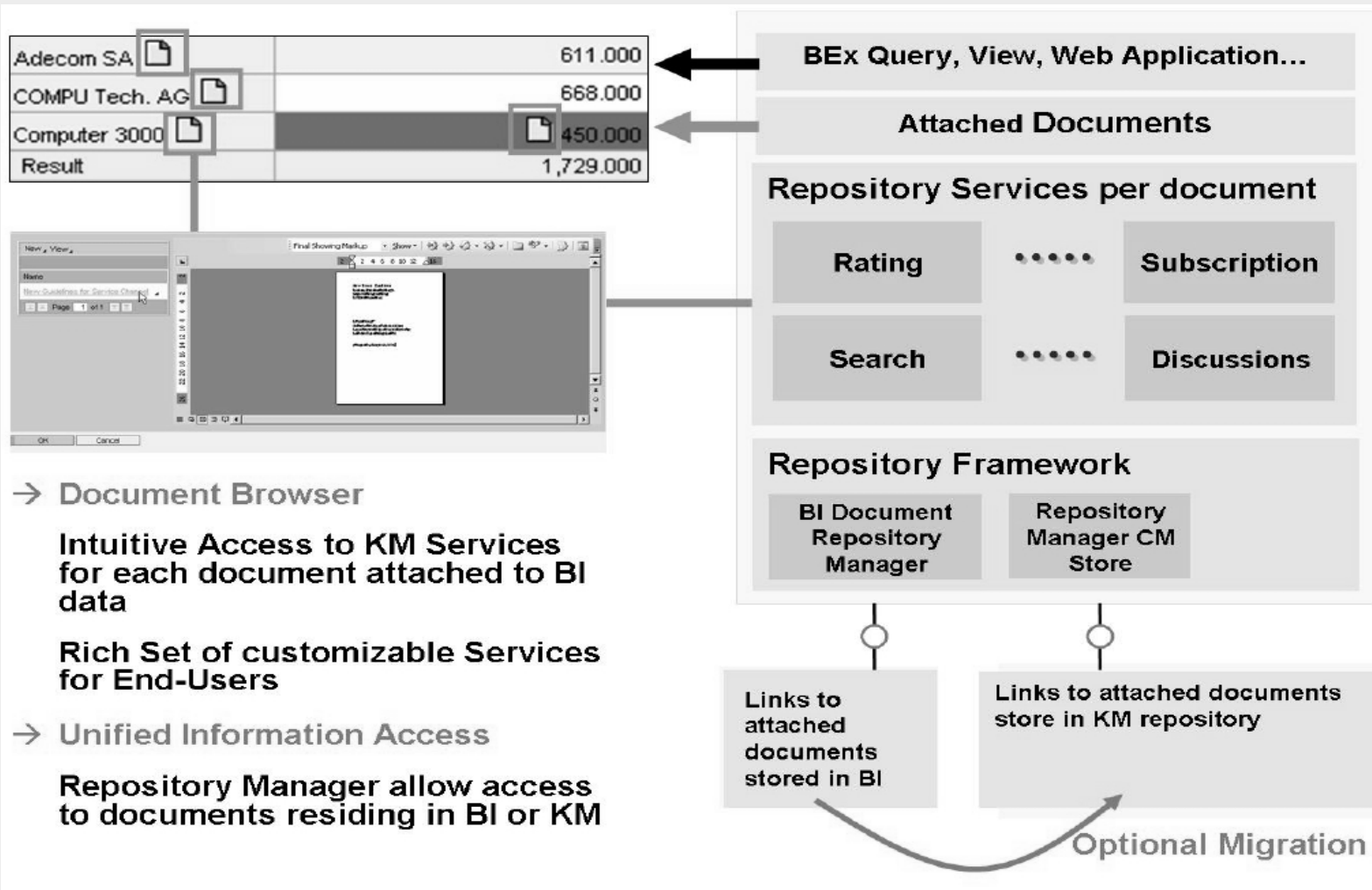
Doc. Class	Doc. Class
	BW_PH_TRAN
Log Doc. Class	BW_LO_TRAN

**6. Start the editor and define a text**

The 'Start Editor' button is highlighted, and a Notepad window is shown, indicating the next step is to define a text.



# BI and KM Document Integration Architecture





# BI and KM Document Integration Architecture

- The BI documents for Metadata, Master Data and InfoProvider Data can be integrated into the portal-based KM in different ways:
- With the Repository Manager for BI Documents. In this case the documents are physically stored on the BI server in the SKWF framework. The Repository Manager for BI Documents is available in the portal as of Release SAP NetWeaver '04.



# BI and KM Document Integration Architecture

- With a migration of documents into a CM repository. In this case, the documents are physically stored in the portal. The CM Repository Manager gives access to these documents. This allows the documents for master data and InfoProvider data to be assigned on the hierarchy node level as well (in addition to the characteristic values).
- With the Repository Manager for BI Metadata. In contrast to manually created documentation for metadata, the HTML-based documentation for the BI metadata will continue to be generated automatically from the metadata repository as needed. The Repository Manager for BI Metadata is available in the portal as of Release SAP NetWeaver 2004 (with SAP BW 3.5).



## Report – Report Interface



# Introduction

- To call further reports or transactions from a report,
- In order to get more detailed information out of SAP BI itself, out of other attached systems and even out of the internet.
- It gives the user the ability to jump from one report into another report that supplies further information. In SAP BI, you can arrive at branch destinations within and outside of the BI system.
- Transaction Code - RSBBS



# Jump targets

- From a query, the destination to which you branch is called a Jump Target.
- Depending on the report types you have selected for a query in the sender/receiver assignment, you can leave the query and:
  - - Start another query where the entry variants are filled by the selection conditions and element definitions of the selected cells of the sender query
  - - Start reports, functions, and transactions inside and outside of SAP BI



# Jumping Reports

In order to start a jump highlight a characteristic value and then use the context menu to launch the Goto option.

Sender Query	
Key Figures	Sales Volume
Sales organization	
Sales employee	
Customer	Sales Volume
J&P	1,500- EUR
Jaspers & Co.	1,780- EUR
Karsson GmbH	3,000- EUR
Lampenmarkt	11,500- EUR
Automat	12,500- EUR

**Select a characteristic**

**Choose a target report**

- Goto...
- Detailed Analysis
- Last 5 years sales
- Customer Open Orders
- R/3 Payment Details



# External URL as Jump Target

- You can indicate an URL address as a jump target as well. In the Allocation Details function in the Query Jump Targets, you define the parameter to be passed to the URL.
- In order to determine the necessary parameter on the Internet side, extensive HTML knowledge is necessary. The Internet source code must be interpreted.

**BW Query**

Customer	Incoming Orders
Becker	23,234.98 EUR
Berlin	
Bayer	33,234.00 EUR
SAP	34,324.56 EUR
Daimler	22,314.36 EUR

<http://qs.money.cnn.com/tq/stockquote?>  
Parameter transferred: SAP

## Managing Query Objects



# Introduction

To manage a huge amount and diversity of query objects.

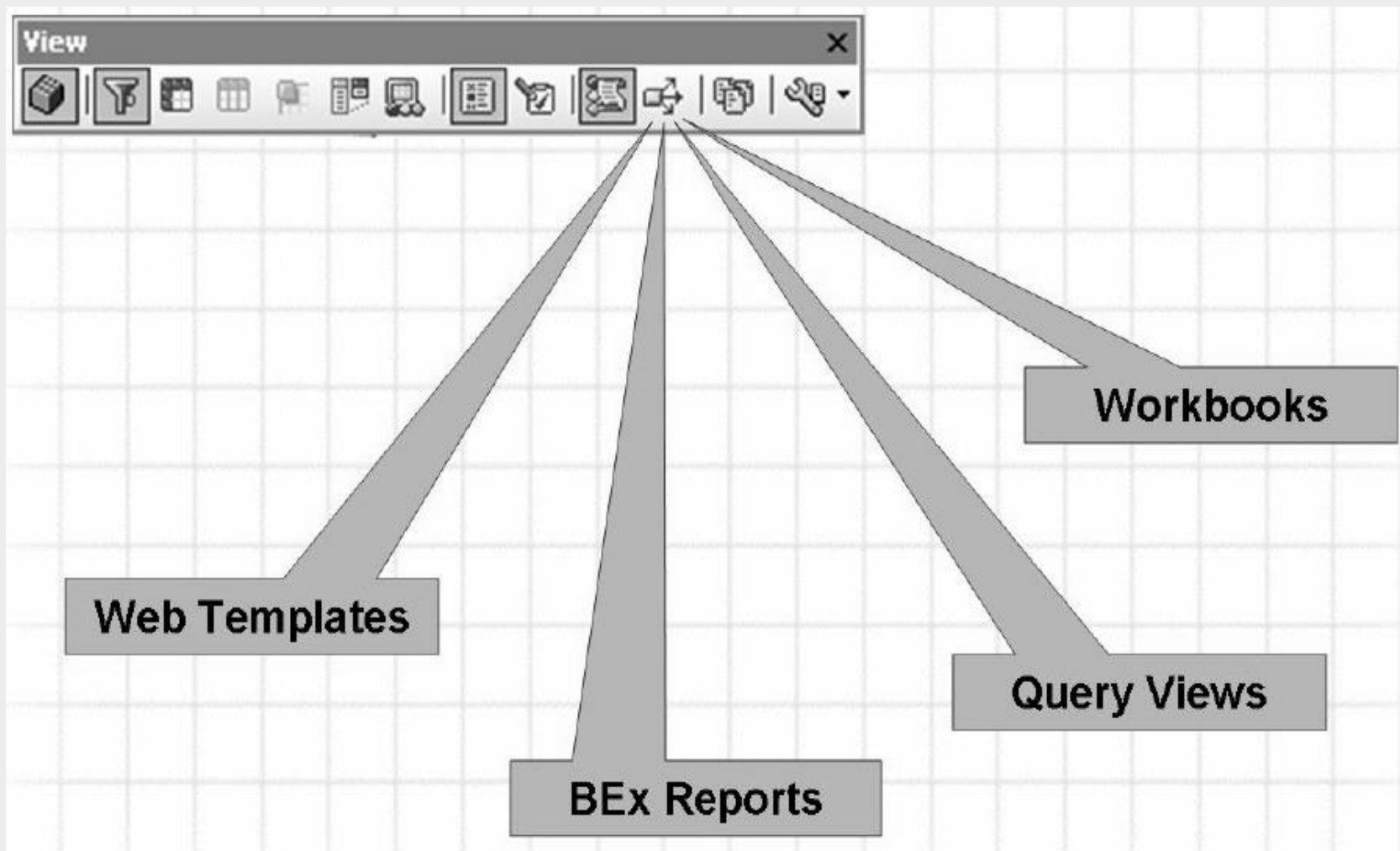
- For example: The defined query objects have to be translated to support multi language.

## Functionalities available:

- Query Where Used List
- Deleting Query Objects
- Copying Queries
- Translating Queries
- Performance Aspects



# Query Where Used List – From Query Designer







# Deleting Query Objects

- From Query Designer
- Using Menu option from SAP, using the path Business Explorer → Query → Delete Objects.

The screenshot illustrates the steps to delete a query object in SAP:

- 1.** Select the query object in the 'Query objects (1) 6 Entries Found' list.
- 2.** Enter the technical name 'T\_SDDEM02' in the 'Technical Name' field.
- 3.** Click the 'Check' button.
- 4.** Confirm the deletion in the 'Really delete objects?' dialog.
- 5.** Confirm the deletion in the 'Deleting Workbooks, Crystal Reports, and Views' dialog.

The 'Deletion of Query Objects' dialog shows the following fields:

Type	Object Version	UID of the Element	InfoCube	Technical Name	Last Changed By	Changed on	Last Used
REP	A			T_SDDEM02	GREEN		

The 'Query objects (1) 6 Entries Found' list shows the following objects:

LOW	Short text
REP	Query
SOB	Filter
STR	Structure
SEL	Restricted Key Figure
CKF	Calculated Key Figure
VAR	Variable

The 'Really delete objects?' dialog shows the following objects:

Technical Name	Name
SPLITPIE000	SPLITPIE000
SALESDIV01	Sales by Division

The 'Löschen' dialog shows the following message:

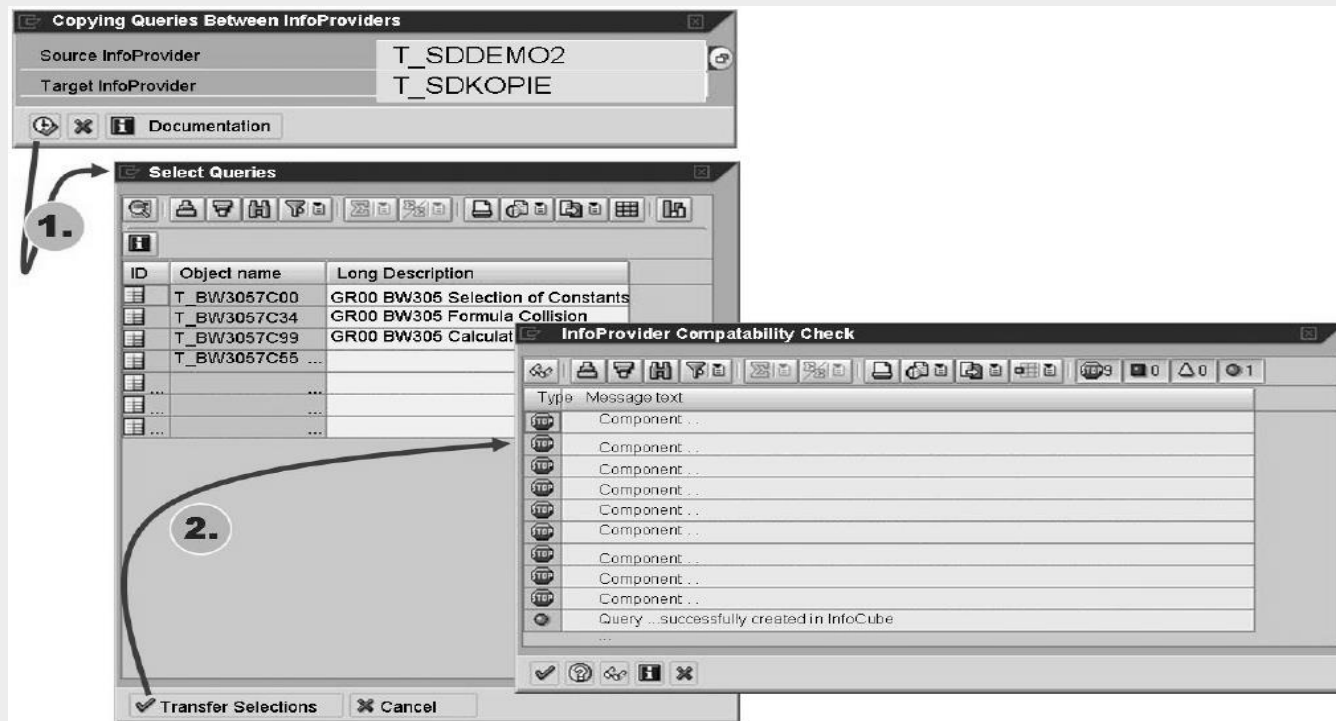
Query object END21TEGR762EZ1RG7DFGIA0 successfully deleted

The 'Deleting Workbooks, Crystal Reports, and Views' dialog shows the following message:

Dependent Workbooks, Crystal Reports, and Views May Exist  
Do you want to delete these objects from your favorites and roles?

# Copying Queries Between InfoProviders

- In the SAP menu under Business Explorer, you find a Copy function that enables you to copy queries and their subobjects (structures, calculated key figures, restricted key figures) between different InfoProviders.





# Translating Query Objects

- In the Translation function area in the Data Warehousing Workbench, you can translate short and long texts for BI objects, this includes query objects.

Find the query object translation function in the Data Warehousing Workbench

Subobjects are also collected for translation

Select the query objects within these types

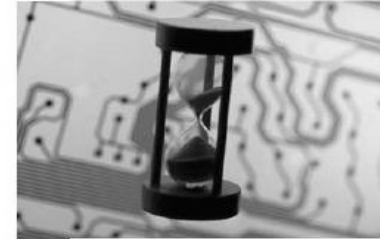
Collected objects	Technical name	Last ch...
Sales organizations	TBW30522KUNDEN2	NEUMANN
Customer/Revenue 2001	T_BW30520KUNDEN1	SIMON
InfoCube		
Query Element		
Country	01SLQTB5SGKKMG2KB7YLNJVP1	
Key Figures	1QYLUXS6HLRZJKRZHDV015IU5	
Material	3MQBEV2V97JW6POSQJ857QXWJ	
Calendar year	89QAVSQN6ACORCXB8I89BPPCW	
Sold-to Party	9NRQWQ4S21LP8NUI4ELEWWAH2	
Sales revenue	DVS1Z17H9NT4NPS085D18W2A2	
Incoming Orders	DY14RCV0PR4NERHAYXRFJY00R	
Sales Organization	END2M99FXTSD0TU37BB7T4AX	
Country?	T_LAND	NEUMANN

# Performance Aspects of Query Definition



## Common query design mistakes :

- Overlapping filters
- Too many drill down characteristics in initial view
- Over-use of exclude function



## Have you considered...

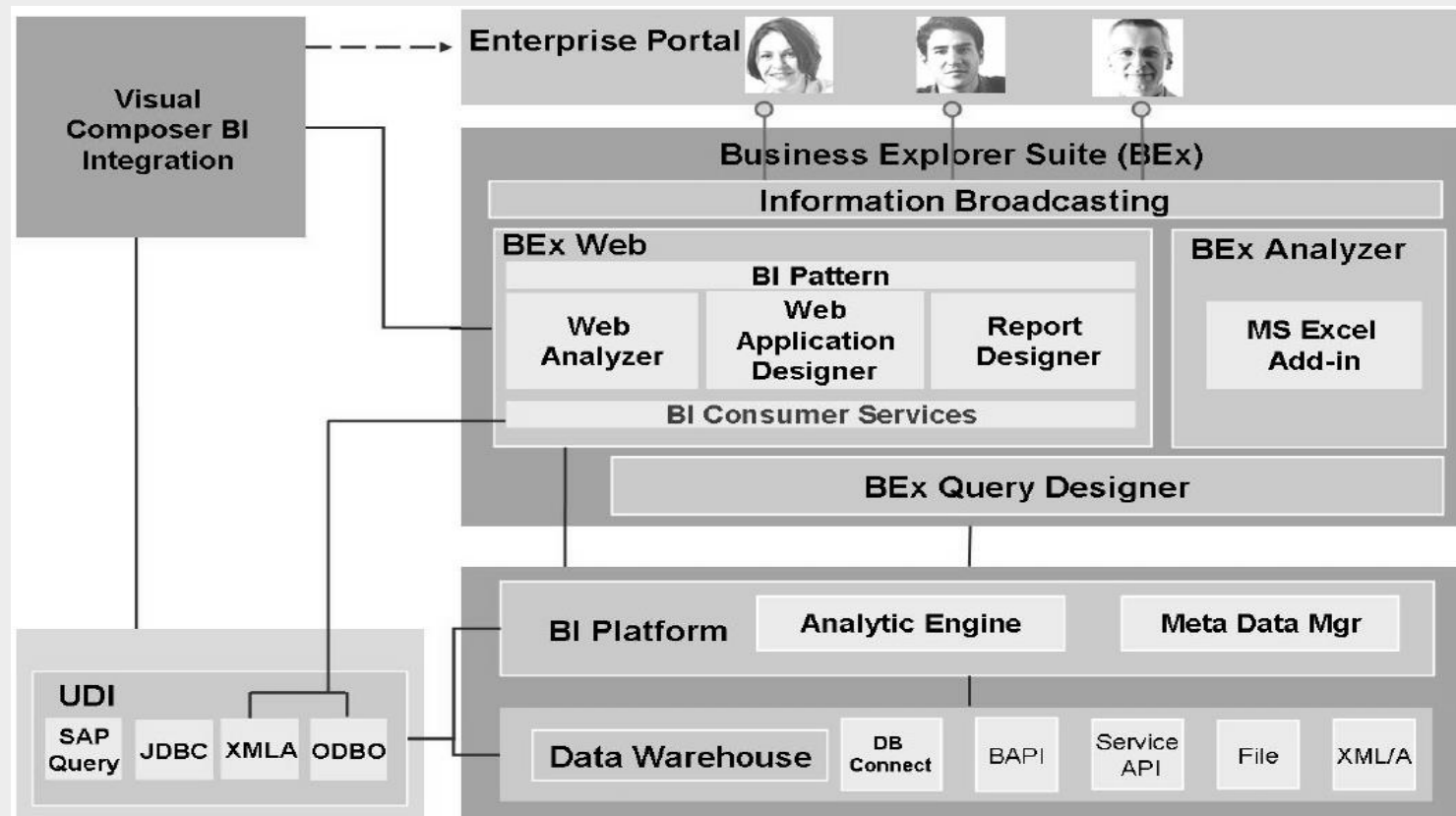
- Design aggregates aligned to common filter requirements
- Make use of precalculated web templates
- Make use of value sets
- Switch BEx Analyzer workbook refresh mode to manual
- Use query performance monitoring tools
- Ensure the read mode of the query is set appropriately
- Warm up query cache via broadcaster
- Implement BI Accelerator

## Further SAP BI Reporting Tools



# Introduction

- In order to enhance and to adapt layouts to individual needs further reporting tools are available within the Business Explorer.



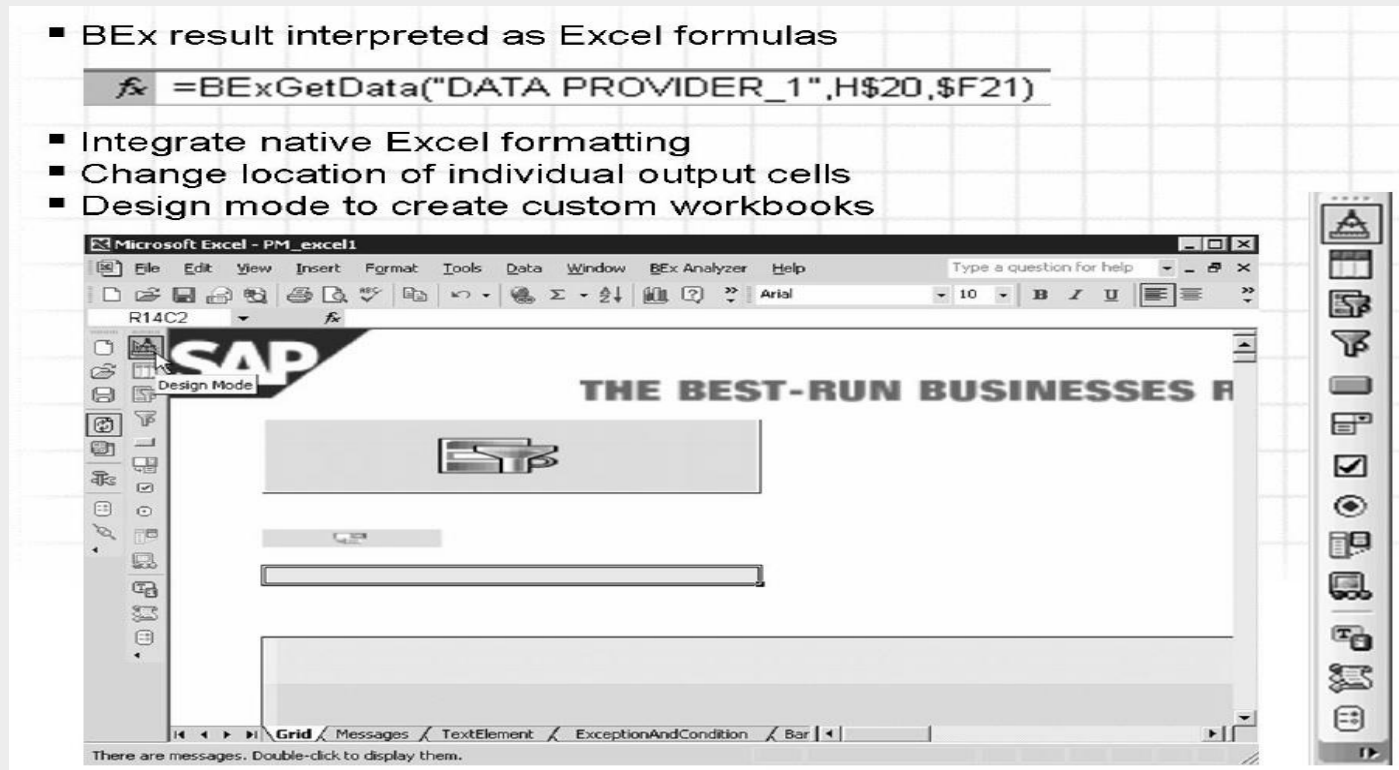
# BEx Analyzer : Advanced design options

- The Design Mode of the BEx Analyzer which provides a range of tools to allow an experienced BI developer to create highly customized and sophisticated workbooks.

- BEx result interpreted as Excel formulas

```
=BExGetData("DATA PROVIDER_1",H$20,$F21)
```

- Integrate native Excel formatting
- Change location of individual output cells
- Design mode to create custom workbooks

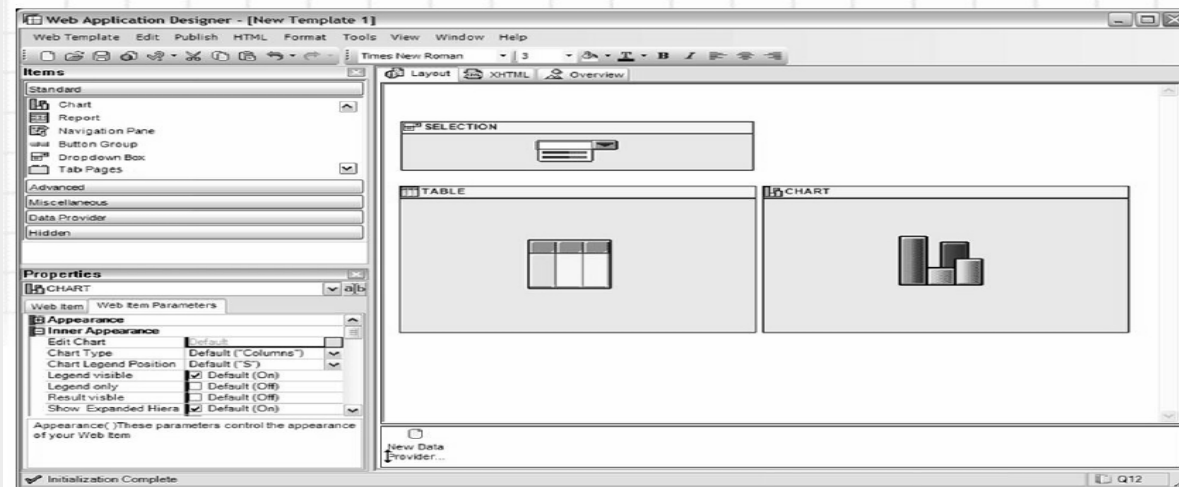




# BEx Web Application Designer

- The tool is designed to be used by relative web novices with wizards and auto-prompts to assist in complex areas of development.
- The template can be enhanced with native web languages such as HTML and Java Script.

- Design sophisticated web cockpits / dashboards
- Drag and drop layout mode or native XHTML mode
- Wizard for commands (e.g. buttons)
- Auto-complete function for Web developers
- Integrate native web elements



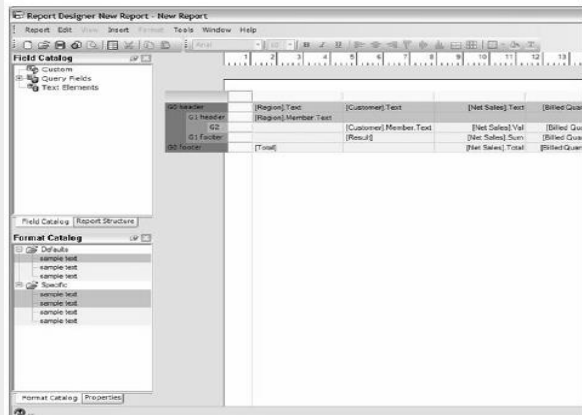




# BEx Report Designer

- The BEx Report Designer takes the output from a query or query view and allows you control the precise positioning and formatting of the output. The result can be viewed on the web, broadcast or generated as a PDF to save or print..

- Highly formatted web based report design
- Improve clarity of complex results
- Re-position result cells
- Send results Broadcaster or PDF
- Insert headers, footers, logos
- Basic filtering



The screenshot shows the SAP Enterprise Portal 7.0 interface. The browser window displays the 'Sales Analysis RD' report. The report is titled 'Sales Analysis RD' and shows the 'Validity of Data' as 'Oct 2, 2004'. The report is organized into sections for 'Central', 'North East', 'South East', and 'West', each containing a list of customers and their respective sales and billed quantities. The 'Overall Result' is shown at the bottom.

Region	Customer	Net Sales	Billed Quantity
Central	Brake Service Co Inc	\$ 594,549.00	203,377 PCE
	Pepper Mill Clothes Group	\$ 1,534,206.00	454,843 PCE
	Ramon Scissor Hands	\$ 1,170,523.00	274,095 PCE
	Result	\$ 3,299,278.00	932,315 PCE
North East	Black Stone Printing Comp	\$ 727,640.00	251,495 PCE
	Curry Tools Ltd	\$ 1,479,484.00	382,657 PCE
	Airmaster Supplies Ltd	\$ 1,816,863.00	351,696 PCE
	Result	\$ 3,823,987.00	985,848 PCE
South East	Bear Associates Ltd	\$ 1,117,466.00	213,567 PCE
	Metro Clothes Group Inc	\$ 1,451,463.00	446,876 PCE
	Seahawk Company Ltd	\$ 1,432,787.00	378,266 PCE
	Result	\$ 4,001,716.00	1,038,709 PCE
West	Blue Line Agriculture	\$ 1,293,690.00	302,821 PCE
	Bowes & Bowes Sales In	\$ 1,358,519.00	295,297 PCE
	Result	\$ 2,652,209.00	598,218 PCE
Overall Result		\$ 13,777,190.00	3,555,090 PCE



# NetWeaver Visual Composer

- NetWeaver Visual Composer is not actually part of the BEx Suite, it is part of SAP Analytics.
- Can establish a closed loop analytical application which bring together all the key information required (from transactional and analytical sources) in one place to support my decision making.
- NetWeaver Visual Composer provides the tools to help us build these types of applications. BI content (queries, views, InfoProviders) can easily be integrated into the Visual Composer using a special Wizard.



# NetWeaver Visual Composer

Worklist from ECC transaction data

**Blocked Order List**

Blocked Order List

Doc Number	Short Text	Customer	Net Value	Currency	Creation Date
0000010708	MAG DX 15F/Fe	CMS0000040	11279.85	EUR	
0000010733	MAG DX 15F/Fe	CMS0000040	7519.9	EUR	
0000010734	MAG DX 15F/Fe	CMS0000040	7519.9	EUR	
0000010872	MAG DX 15F/Fe	CMS0000001	8990	USD	
0000010873	MAG DX 15F/Fe	CMS0000001	8990	USD	

**Decisions**

**Customer Detail**

Customer: CMS0000040 Tubes Ltd. Country: Great Britain

Credit Score: 39 Blocked in Credit Mgmt: ☐ Customer blocked

Risk Class: E Very High Default Risk Special Attention: ☐ Special Attention

**Exposure List**

Business Unit	Credit Limit	Exposure	Credit Limit Usage
Main Credit Segment	\$ 500,000.00	\$ 1,645,115.49	329,0
IDES AG	39,000.00 EUR		0,0
IDES UK	39,000.00 EUR		0,0
IDES US INC	\$ 500,000.00	\$ 1,645,115.49	329,0
IDES US INC - Services	\$ 39,000.00		0,0
IDES - Financial Service	\$ 0,00		0,0

**Exposure Chart by Business Unit**

**Statistics from ECC**

Business Unit: Main Credit Segmen Credit Group: Not assigned

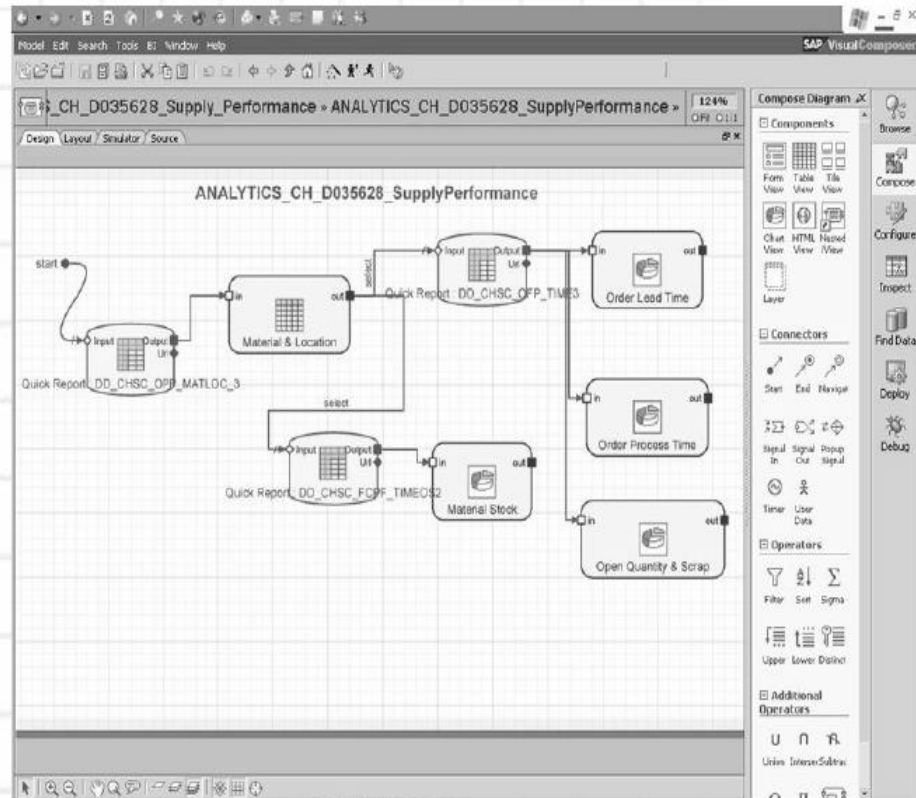
**Customer Score History**

Statistics from BI



# NetWeaver Visual Composer

- Design Analytical Applications
- Model driven design
- BI Integration Wizard
- Integrate output from BI and other sources
- Context sensitive embedded applications



## BI Migration Aspects



# Migrating to the NetWeaver 2004s BI Environment

## ■ New BEx Tools in SAP NetWeaver 2004s

- New SAP NetWeaver 2004s frontend features are ONLY available with the new SAP NetWeaver 2004s BEx Tools.
- Objects that were created with the SAP NetWeaver 2004s BEx tools can no longer be edited with 3.x BEx Tools.

## ■ 3.x Tools on top of SAP NetWeaver 2004s BI

- To ensure that existing customer scenarios can continue to be edited (mainly for correction purposes), an additional set of 3.x BEx tools is delivered with the SAP NetWeaver 2004s BEx frontend installation.
- It is possible to work with these 3.x BEx tools in connection with the new SAP NetWeaver 2004s BI Server.

## ■ Transition from BEx 3.x to SAP NetWeaver 2004s BEx Tools

- Conversion (if possible) occurs when the previous objects are opened in the new tools. This enables transition on an as-needed basis. There is no mass conversion of objects.
- Converted objects are stored as new objects. Old objects are never automatically deleted.
- The recommendation is to make the change step by step, because further new features will only be made for the new tools.

## Intercompany Elimination



# Inter-Company Elimination

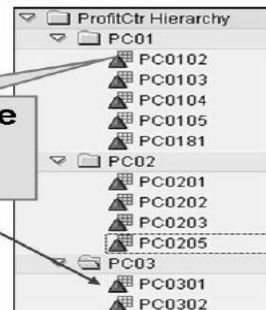
- If company structure is complex, with many international divisions, when profit centers do business internally, that revenue must be eliminated from the totals at higher levels of the reports to avoid overstating revenue.

**Example: Profit Center PC0301(UK) has internal revenue of \$50.00 from Partner Profit Center PC0102 (DE). This revenue must be eliminated for the European rollup.**



Record Number	Partner Profit Center	Profit Center	Country	Partner Country	Revenue
1	PC0102	PC0181	DE	DE	\$ 100.00
2	PC0103	PC0203	DE	DE	\$ 200.00
3	PC0102	PC0301	UK	DE	\$ 50.00
4	#	PC0201	DE	AT	\$ 100.00
5	PC0301	PC0201	DE	UK	\$ 300.00
6	PC0201	PC0201	DE	CDN	\$ 200.00
7	PC0203	PC0302	UK	US	\$ 250.00
8	PC0203	PC0302	SGP	DE	\$ 150.00
9	#	PC0201	DE	US	\$ 80.00
10	PC0201	PC0201	DE	AT	\$ 500.00
Overall Result	Result	Result	Result	Result	\$ 1,930.00

**Multi-entity, multiple simultaneous hierarchies**



**Multi-entity, multiple simultaneous hierarchies**

