Step-by-Step: From the Data Model to the BI Application in the Web

SAP NetWeaver 7.0

Document Version 1.00 – March 2008
**Typographic Conventions**

<table>
<thead>
<tr>
<th>Type Style</th>
<th>Represents</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Example Text</strong></td>
<td>Words or characters quoted from the screen. These include field names, screen titles, pushbuttons labels, menu names, menu paths, and menu options. Cross-references to other documentation.</td>
</tr>
<tr>
<td><strong>Example text</strong></td>
<td>Emphasized words or phrases in body text, graphic titles, and table titles.</td>
</tr>
<tr>
<td><strong>EXAMPLE TEXT</strong></td>
<td>Technical names of system objects. These include report names, program names, transaction codes, table names, and key concepts of a programming language when they are surrounded by body text, for example, SELECT and INCLUDE.</td>
</tr>
<tr>
<td><strong>Example text</strong></td>
<td>Output on the screen. This includes file and directory names and their paths, messages, names of variables and parameters, source text, and names of installation, upgrade and database tools.</td>
</tr>
<tr>
<td><strong>Example text</strong></td>
<td>Exact user entry. These are words or characters that you enter in the system exactly as they appear in the documentation.</td>
</tr>
<tr>
<td><code>&lt;Example text&gt;</code></td>
<td>Variable user entry. Angle brackets indicate that you replace these words and characters with appropriate entries to make entries in the system.</td>
</tr>
<tr>
<td><strong>EXAMPLE TEXT</strong></td>
<td>Keys on the keyboard, for example, F2 or ENTER.</td>
</tr>
</tbody>
</table>

**Icons in Body Text**

<table>
<thead>
<tr>
<th>Icon</th>
<th>Meaning</th>
</tr>
</thead>
<tbody>
<tr>
<td>🚨</td>
<td>Caution</td>
</tr>
<tr>
<td>🏷️</td>
<td>Example</td>
</tr>
<tr>
<td>📝</td>
<td>Note</td>
</tr>
<tr>
<td>🚩</td>
<td>Recommendation</td>
</tr>
<tr>
<td>📊</td>
<td>Syntax</td>
</tr>
</tbody>
</table>

Additional icons are used in SAP Library documentation to help you identify different types of information at a glance. For more information, see Help on Help → General Information Classes and Information Classes for Business Information Warehouse on the first page of any version of SAP Library.
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Step-by-Step: From the Data Model to the BI Application in the Web

Task
This tutorial guides you step-by-step through the basic procedures for creating a simple but complete SAP NetWeaver BI scenario. Complete means that you create a simple data model, define the data flow from the source to the BI store of your data model, and then load data or enter data directly in the BI system. To be able to analyze the data, you then create a Web-based BI application that you broadcast by E-mail to your employees.

The company in our scenario produces laptops, PCs and computer accessories, and distributes its products over various channels. An advertising campaign for the Internet distribution channel was started in July by the marketing department. The success of the campaign is to be checked in October of the same year in order to decide whether and how the campaign should be continued. A revenue report containing the data of the past quarter and showing the revenue for the various distribution channels during this time is therefore required.

Objective
At the end of the tutorial you will be able to perform the following tasks:

- Create a simple BI data model with InfoObjects (characteristics, key figures) and an InfoCube for storing data in the BI system.

  In our scenario, the "container" for the revenue data is an InfoCube. It consists of key figures and characteristics. The key figures provide the transaction data to be analyzed, in our case sales figures and amounts. The characteristics are the reference objects for the key figures; in our scenario these are Product, Product Group and Channel. They contain the master data, which remains unchanged over a long period of time. The master data of the characteristics in this scenario can be attributes and texts.

You create the data model in the following steps:
  - Creating Key Figures
  - Creating Characteristics
  - Creating InfoCubes

- Map the source structure of the data in the BI system and define the transformation of the data from the source structure to the target format. In this way you will be able to define the data flow in the BI system.

  The structure and properties of the source data are represented in the BI system with DataSources. In our scenario, we need DataSources to copy master data for the characteristic Product as well as sales data from the relevant file to the entry layer of the BI system.

  The transformations define which fields of the DataSource are assigned to which InfoObjects in the target and how the data is transformed during the load process. In our simple scenario, the transformations are kept simple and do not contain any complex rules. The assignment is direct, that is the fields of the source are copied to the InfoObjects of the target one-to-one.

You create the necessary objects for defining the data flow in the following steps:
- Creating DataSources for Master Data of Characteristic “Product”
- Creating DataSources for Transaction Data
- Creating Transformations for Master Data from Characteristic “Product”
- Creating Transformations for InfoCubes

- Load the data.
  The load processes are executed using InfoPackages and data transfer processes. The InfoPackages load the data from the relevant file into the DataSource, and the data transfer processes load the master data from the DataSource into the characteristic Product or the transaction data into the InfoCube. When the data transfer process is executed, the data is subject to the corresponding transformation. For the characteristics Product Group and Channel, we show that it is also possible to load small amounts of master data directly in the BI system instead of from the source. In this case neither DataSources and transformations nor InfoPackages and data transfer processes are required.

You create the necessary objects for loading data in the following steps:
- Creating Master Data Directly in the System
- Loading Master Data for Characteristic “Product”
- Loading Transaction Data

- Define a query that is used as the basis for a Web application and allows for an ad-hoc analysis of the data in the Web.

You create the query in the following step:
- Defining Queries

- Create a Web application with navigation options and functions, such as printing based on the query.

You create the Web application in the following step:
- Creating Web Applications

- Analyze the data in the Web application, add comments to it, and broadcast it by E-mail to other employees.

You analyze and broadcast the data in the following steps:
- Analyzing Data in the Web Application
- Broadcasting Web Applications by E-Mail

**Prerequisites**

**Systems, Installations and Authorizations**

- You have a BI system in which usage types BI ABAP and BI Java are installed and configured.
- You installed the SAP front end with the BI front end add-on.
- You installed a Web browser.
You installed and configured the Adobe document services.

You installed Adobe Reader.

You have a user that is assigned to the following roles:
- S_RS_RDEAD
- S_RS_ROPAD
- S_RS_RDEMO
- S_RS_ROPOP
- S_RS_RREDE
- S_RS_RREPU

To be able to broadcast BI contents by e-mail at a later time, you have sufficient authorization for authorization object S_OC_SEND.

**Data**

The sample data for our scenario is available as csv files:

- **Tutorial_Prod_Attr.csv**
  This file contains the attributes for characteristic `Product`.

- **Tutorial_Prod_Texts.csv**
  This file contains the texts for characteristic `Product`.

- **Tutorial_Trans.csv**
  This file contains the sales data for the months July to September.

You stored the files in a folder on your local host. You can download the files from the following Internet address: `sdn.sap.com/irj/sdn/nw-bi → Knowledge Center (SAP NetWeaver 7.0) → Getting Started → Documentation → Sample Data for BI Tutorial`.

**Knowledge**

You have a basic knowledge of the architecture of SAP NetWeaver BI and have read the section `Business Intelligence: Overview` in the SAP NetWeaver 7.0 BI documentation under the following Internet address: `help.sap.com/nw70 → Functional View → SAP NetWeaver by Key Capability → Information Integration: Key Areas → Business Intelligence → Business Intelligence: Overview`.

**Continue with ...**

1 **Creating Key Figures**

**Use**

You create the key figures `Revenue`, `Quantity` and `Price`.

`Revenue` and `Quantity` are values that can be analyzed at a later time. These are quantities and amounts and form the data part of the InfoCube.
The key figure *Price* is used in our scenario as an attribute for the InfoObject *Product*, which you will create at a later time.

**Procedure**

1. Log onto the BI system with a user that has sufficient authorizations for executing the scenario.

2. Start the Data Warehousing Workbench in the SAP menu by choosing *Modeling → Data Warehousing Workbench: Modeling.*

   **Data Warehousing Workbench: Modeling**

   Various functional areas are displayed at the left in the Data Warehousing Workbench. In the functional area *Modeling* you can display different views on the objects used in the Data Warehouse, such as InfoProviders and InfoObjects. These views show the objects in a tree. You call the functions for the relevant object from context menus (right mouse button).

3. Under *Modeling*, choose **InfoObjects**.

   The InfoObject tree is displayed.

4. From the context menu at the root node *InfoObjects* of the InfoObject tree, choose *Create InfoArea*.

5. On the next screen, enter a technical name and a description for the InfoArea.

   The InfoArea is displayed in the InfoObject tree. It is used to group your InfoObjects.

6. In the context menu of the InfoArea, choose *Create InfoObject Catalog*.

7. On the next screen, enter a technical name and description, and select *Key Figure* as the InfoObject Type.
8. Choose Create.

You go to the screen for InfoObject catalog editing.

**Edit InfoObject Catalog**

![Edit InfoObject Catalog](image)


The InfoObject catalog is displayed in your InfoArea. It is used to group your key figures.

10. Perform the following procedures to create each of the key figures Revenue, Quantity and Price.

   a. Choose Create InfoObject... in the InfoArea for your InfoObject catalog for key figures.

   b. Enter the required data on the next screen:

<table>
<thead>
<tr>
<th>Input Field</th>
<th>Revenue</th>
<th>Quantity</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>KeyFig.</td>
<td>ZD_REV</td>
<td>ZD_QTY</td>
<td>ZD_PRICE</td>
</tr>
<tr>
<td>Long description</td>
<td>Revenue</td>
<td>Quantity</td>
<td>Price</td>
</tr>
</tbody>
</table>

   c. Choose Continue.

   The key figure maintenance screen appears.

   d. Make the following entries on the tab page Type/unit:

<table>
<thead>
<tr>
<th>Field</th>
<th>Revenue</th>
<th>Quantity</th>
<th>Price</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type/Data Type</td>
<td>Amount</td>
<td>Quantity</td>
<td>Amount</td>
</tr>
<tr>
<td>Data Type</td>
<td>CURR – Currency field, stored as DEC</td>
<td>QUAN – Quantity field, points to a unit field with format UN</td>
<td>CURR – Currency field, stored as DEC</td>
</tr>
<tr>
<td>Unit/currency</td>
<td>0CURRENCY</td>
<td>0UNIT</td>
<td>0CURRENCY</td>
</tr>
</tbody>
</table>
The information on the tab page is as follows for the key figure Revenue:

<table>
<thead>
<tr>
<th>Type/Unit</th>
<th>Aggregation</th>
<th>Additional Properties</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Type/Data Type**
  - Amount
  - Quantity
  - Number
  - Integer
  - Date
  - Time

- **Data Type**
  - CURR - Currency field, stored as DEC

- **Currency/unit of measure**
  - Fixed currency
  - Fixed Unit of Meas.
  - Unit/currency

```
CurrencyKey
```

e. Activate the InfoObject.

**Result**

You created the following key figures for the scenario:

- **Revenue** (ZD_REV)
- **Quantity** (ZD_QTY)
- **Price** (ZD_PRICE)

These key figures are displayed in your InfoObject catalog. Revenue and Quantity can be used later to define the InfoCube.

**Continue with ...**

## 2 Creating Characteristics

**Use**

You create the characteristics Product Group, Channel and Product.

The characteristics are required to define the reference when analyzing the sales data. In this scenario, you want to see the sales for the Internet distribution channel.

You create the characteristic Product with several attributes. The attributes for a characteristic are InfoObjects that are used to structure and order the characteristic. In our scenario, the attributes Price and Currency are defined as pure display attributes that provide additional information about Product. On the other hand, you define the attribute Product Group as a navigation attribute. It can thus be used in the query like a normal characteristic and can also be used without the characteristic Product.
Procedure

1. In the **Modeling** area of the Data Warehousing Workbench, choose **InfoObjects**.
2. In the context menu of your InfoArea, choose **Create InfoObject Catalog**.
3. On the next screen, enter a technical name and a description.
4. Select **Char.** as **InfoObject Type**.
5. Choose **Create**.
   
   You go to the screen for InfoObject catalog editing.
6. Activate the InfoObject catalog.
   
   The InfoObject catalog is displayed in your InfoArea. It is used to group your key characteristics.
7. Perform the following procedure for the characteristics **Product Group**, **Channel** and **Product**.
   - a. Choose **Create InfoObject...** in the InfoArea of your InfoObject catalog for characteristics.
   - b. Enter the required data on the next screen:

<table>
<thead>
<tr>
<th>Input Field</th>
<th>Product Group</th>
<th>Channel</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Char.</td>
<td>ZD_PGROUP</td>
<td>ZD_CHAN</td>
<td>ZD_PROD</td>
</tr>
<tr>
<td>Long description</td>
<td>Product Group</td>
<td>Channel</td>
<td>Product</td>
</tr>
</tbody>
</table>

   - c. Choose **Continue**.
     
     The characteristic maintenance screen appears.
   - d. Make the following entries on the tab page **General**:

<table>
<thead>
<tr>
<th>Field</th>
<th>Product Group</th>
<th>Channel</th>
<th>Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>Data Type</td>
<td>CHAR – character string</td>
<td>CHAR – character string</td>
<td>CHAR – character string</td>
</tr>
<tr>
<td>Length</td>
<td>6</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Characteristic Is</td>
<td>-</td>
<td>Set the indicator.</td>
<td>-</td>
</tr>
<tr>
<td>Document Property</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   The information on the tab page is as follows for the characteristic **Product**:
e. Go to the Master data/texts tab page.
   
i. Select With master data and With texts if they are not already selected.
   
ii. In the field below Character. is InfoProvider, enter the technical name of your InfoArea and confirm your entry. The system sets the indicator Character. is InfoProvider.
   
iii. For the characteristic Product: Select the indicator Medium length text exists and deselect Short text exists.
   
The information on the tab page is as follows for the characteristic Product:

For the characteristic Product: Go to the tab page Attribute.
   
iv. Add the following InfoObjects as attributes. Note the order:
   
1. ZD_PRGROUP - Product Group
2. OCURRENCY - Currency Key (the currency key is a shipped InfoObject of BI Content)
3. ZD_PRICE - Price
   
v. Activate the attribute Product Group (ZD_PRGROUP) by choosing Navigation Attribute On/Off as navigation attribute.
   
vi. Select the key figure Texts of char. for this attribute.
f. Activate the InfoObject.

**Result**

You created the following characteristics for the scenario:

- *Product Group* (ZD_PGROUP)
- *Channel* (ZD_CHAN)
- *Product* (ZD_PROD)

These characteristics are displayed in your InfoObject catalog and can be used to define the InfoCube.

The characteristic *Product* contains the display attributes *Price* and *Currency* and the navigation attribute *Product Group*.

You will create the master data for characteristics *Product Group* and *Channel* directly in the BI system later on. You will load the master data for characteristic *Product* into the BI system later.

**Continue with ...**

### 3 Creating InfoCubes

**Use**

You create an InfoCube into which sales data for the scenario is loaded. As InfoProvider, the InfoCube provides the basic data for the query.

**Procedure**

1. You are in the *Modeling* functional area of the Data Warehousing Workbench.
2. Choose *InfoProvider*.
   
   The InfoProvider tree is displayed. The InfoArea created previously in the InfoObject tree is also displayed in the InfoProvider tree. It contains the characteristics that were defined as InfoProvider and is used to group further objects.
3. In the context menu of the InfoArea, choose *Create InfoCube*.
4. In the next screen, enter `ZD_SALES` as the technical name under *InfoCube* and *Sales Overview* as the description.
5. Select *Standard InfoCube* as *InfoProvider Type* and choose ✉ *Create*.
   
   You go to the screen for InfoCube editing.
6. Choose *Create New Dimensions* in the context menu of the folder *Dimensions*.
7. Enter *Product* as the description for the new dimension and choose ✉ *Create Another Dimension*.
8. Enter *Sales Organization* as the description for the new dimension and choose ✅ *Continue*.
   
   The dimensions are inserted.
9. In the toolbar in the left area, choose ▶ InfoObject Catalog.

10. On the next screen, select your InfoObject catalog for characteristics as the template and choose ✔ Continue.

The InfoObject catalog is displayed in the left area with the characteristics you created.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Dimension</th>
</tr>
</thead>
<tbody>
<tr>
<td>ZD_PROD (Product)</td>
<td>Product</td>
</tr>
<tr>
<td>ZD_CHAN (Channel)</td>
<td>Sales Organization</td>
</tr>
</tbody>
</table>

11. Assign the characteristics to the dimensions as follows with drag and drop:

12. Choose InfoObject Direct Input in the context menu of the dimension Sales Organization.

13. On the next screen, enter the characteristic 0DOC_NUMBER (Sales Document) and choose ✔ Continue.

The characteristic Sales Document is a shipped InfoObject of BI Content.

14. Expand the folder Navigation Attributes. Activate the navigation attribute Product Group (ZD_PROD__ZDPGROUP) by setting the indicator in column On/Off.
15. If it does not yet exist, add the following time characteristics of BI Content to the dimension Time. To do this, choose of InfoObject Direct Input in the context menu of the dimension Time, enter the required data, and choose Continue.
   - 0CALMONTH (Calendar Year/Month)
   - 0CALMONTH2 (Calendar Month)
   - 0CALWEEK (Calendar Year/Week)
   - 0CALYEAR (Calendar Year)

16. Choose of InfoObject Direct Input in the context menu of the folder Key Figures and enter the following key figures:
   - ZD_QTY (Quantity)
   - ZD_REV (Revenue)

17. Delete Dimension1, which is not required, if it exists. To do so, choose Delete in the context menu of the dimension.

18. Activate the InfoCube.

Result
You created the InfoCube Sales Overview. You can now create the required objects for loading data.

Continue with ...

4 Creating DataSources for Master Data of Characteristic "Product"

Use
You create two DataSources for the characteristic Product. The DataSources are required to copy the master data attributes (values) and texts for the characteristic Product from the file to the BI system.

The master data for the characteristics Product Group and Channel are later created directly in the system. No DataSources are therefore required in our scenario for these characteristics.

Prerequisites
File source system PC_FILE exists.

Procedure
Perform the following procedure for the attributes and texts for characteristic Product.
   1. You are in the Modeling functional area of the Data Warehousing Workbench.
2. Choose ➤ **DataSources**.

3. From the toolbar in the right screen area, choose ➤ **Choose Source System**.

4. In the menu option **File**, select the source system with the technical name PC_FILE.
   A hierarchical tree of the **DataSources** for this source system is displayed. The **DataSources** are structured semantically by application component.

5. Select **Create application component...** from the context menu at the root node of the **DataSource** tree.

6. On the next screen, enter a technical name and a description for the application component.
   The application component is used to group your **DataSources** for this scenario.

7. In the context menu of your application component, choose **Create DataSource**.

8. Enter the required data on the next screen.

<table>
<thead>
<tr>
<th>Input Field</th>
<th>Attributes</th>
<th>Texts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DataSource</strong></td>
<td><strong>ZD_PROD_ATTRIBUTES</strong></td>
<td><strong>ZD_PROD_TEXTS</strong></td>
</tr>
<tr>
<td><strong>Data Type DataSource</strong></td>
<td><strong>Master Data Attributes</strong></td>
<td><strong>Master Data Text</strong></td>
</tr>
</tbody>
</table>

9. Choose ✅ **Transfer**.
   The **DataSource** maintenance screen appears.

10. Enter the required data on the tab page **General Info**.

<table>
<thead>
<tr>
<th>Input Field</th>
<th>Attributes</th>
<th>Texts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Short description</td>
<td><strong>Product – Attributes</strong></td>
<td><strong>Product – Texts</strong></td>
</tr>
</tbody>
</table>

11. Go to the tab page **Extraction** and define the following:

<table>
<thead>
<tr>
<th>Field</th>
<th>Attributes</th>
<th>Texts</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adapter</strong></td>
<td>Load Text-Type File from Local Workstation</td>
<td>Load Text-Type File from Local Workstation</td>
</tr>
<tr>
<td><strong>File Name</strong></td>
<td>From the files of your local host, select the file <strong>Tutorial_Prod_Attr.csv</strong></td>
<td>From the files of your local host, select the file <strong>Tutorial_Prod_Texts.csv</strong></td>
</tr>
<tr>
<td><strong>Header Rows to be Ignored</strong></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><strong>Data Format</strong></td>
<td>Separated with Separator (for Example, CSV)</td>
<td>Separated with Separator (for Example, CSV)</td>
</tr>
<tr>
<td><strong>Data Separator</strong></td>
<td>;</td>
<td>;</td>
</tr>
<tr>
<td><strong>Escape Sign</strong></td>
<td>“</td>
<td>“</td>
</tr>
<tr>
<td><strong>Number format</strong></td>
<td>Direct Entry</td>
<td>User Master Record</td>
</tr>
<tr>
<td><strong>Thousands Separator</strong></td>
<td>.</td>
<td>Not applicable</td>
</tr>
<tr>
<td><strong>Decimal Point Separator</strong></td>
<td>.</td>
<td>Not applicable</td>
</tr>
</tbody>
</table>
The information on the tab page is as follows for attributes:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delta Process</td>
<td>Full Upload (Delta from InfoPackage Selection Only)</td>
</tr>
<tr>
<td>Direct Access</td>
<td>NO DTP Allowed for Direct Access</td>
</tr>
<tr>
<td>Real Time</td>
<td>Real-Time Data Acquisition is Not Supported</td>
</tr>
<tr>
<td>Adapter</td>
<td>Load Text Type File from Local Workstation</td>
</tr>
<tr>
<td>File Name</td>
<td>C:\Documents and Settings\Desktop\Tutorial_Pri.</td>
</tr>
<tr>
<td>Header Rows to be Ignored</td>
<td>1</td>
</tr>
<tr>
<td>Character Set Settings</td>
<td>Default Setting</td>
</tr>
<tr>
<td>System Codepage</td>
<td>4102 UTF-16BE Unicode / ISO/IEC 10646</td>
</tr>
<tr>
<td>Data Format</td>
<td>Separated with Separator (for Example, CSV)</td>
</tr>
<tr>
<td>Data Separator</td>
<td>;</td>
</tr>
<tr>
<td>Escape Sign</td>
<td>&quot;</td>
</tr>
<tr>
<td>Convers. Lang.</td>
<td>User Master Record</td>
</tr>
<tr>
<td>Number format</td>
<td>Direct Entry</td>
</tr>
<tr>
<td>Thousands Separator</td>
<td></td>
</tr>
<tr>
<td>Decimal Point Separator</td>
<td></td>
</tr>
</tbody>
</table>

The information on the tab page is as follows for texts:

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Delta Process</td>
<td>Full Upload (Delta from InfoPackage Selection Only)</td>
</tr>
<tr>
<td>Direct Access</td>
<td>NO DTP Allowed for Direct Access</td>
</tr>
<tr>
<td>Real Time</td>
<td>Real-Time Data Acquisition is Not Supported</td>
</tr>
<tr>
<td>Adapter</td>
<td>Load Text Type File from Local Workstation</td>
</tr>
<tr>
<td>File Name</td>
<td>C:\Documents and Settings\Desktop\Tutorial_Pri.</td>
</tr>
<tr>
<td>Header Rows to be Ignored</td>
<td>1</td>
</tr>
<tr>
<td>Character Set Settings</td>
<td>Default Setting</td>
</tr>
<tr>
<td>System Codepage</td>
<td>4102 UTF-16BE Unicode / ISO/IEC 10646</td>
</tr>
<tr>
<td>Data Format</td>
<td>Separated with Separator (for Example, CSV)</td>
</tr>
<tr>
<td>Data Separator</td>
<td>;</td>
</tr>
<tr>
<td>Escape Sign</td>
<td>&quot;</td>
</tr>
<tr>
<td>Convers. Lang.</td>
<td>User Master Record</td>
</tr>
<tr>
<td>Number format</td>
<td>User Master Record</td>
</tr>
</tbody>
</table>
12. Select the tab page Proposal and choose Load Examples.

13. Using the data in the file, the system creates a field proposal for the DataSource.

14. Go to the Fields tab page.

   In the dialog box, choose Yes.
   
   The field list of the DataSource is copied from the Proposal tab page.

15. Make the following changes and enhancements:

   ○ For the attribute:
     i. Change the data type of the field PRICE from DEC to CURR and confirm your entry.
     ii. Under Curr/Unit enter CURRENCY for the referenced currency/unit field

   ○ For the texts:
     i. Change the data type of the field LANGUAGE from CHAR to LANG and confirm your entry.
     ii. Select Language Field as the field type for the field LANGUAGE.

The field list for attributes is as follows:

<table>
<thead>
<tr>
<th>Field/Attributes</th>
<th>Description</th>
<th>DC</th>
<th>InfoObject</th>
<th>DataSize</th>
<th>Length</th>
<th>Decim</th>
<th>Extern</th>
<th>L</th>
<th>K</th>
<th>Case</th>
<th>Format</th>
<th>PRC</th>
<th>currUnit</th>
<th>IDT</th>
<th>Null</th>
<th>Opt</th>
<th>FieldType</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROID</td>
<td>Prod</td>
<td></td>
<td></td>
<td>CHAR</td>
<td>5</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PL_ID</td>
<td>Prod</td>
<td></td>
<td></td>
<td>CHAR</td>
<td>4</td>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CURRENCY</td>
<td>Currency</td>
<td></td>
<td></td>
<td>CHAR</td>
<td>5</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRICE</td>
<td>Price</td>
<td></td>
<td></td>
<td>CHAR</td>
<td>7</td>
<td>2</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The field list for texts is as follows:

<table>
<thead>
<tr>
<th>Field/Attributes</th>
<th>Description</th>
<th>DC</th>
<th>InfoObject</th>
<th>DataSize</th>
<th>Length</th>
<th>Decim</th>
<th>Extern</th>
<th>L</th>
<th>K</th>
<th>Case</th>
<th>Format</th>
<th>PRC</th>
<th>currUnit</th>
<th>IDT</th>
<th>Null</th>
<th>Opt</th>
<th>FieldType</th>
</tr>
</thead>
<tbody>
<tr>
<td>PROID</td>
<td>Prod</td>
<td></td>
<td></td>
<td>CHAR</td>
<td>5</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PRODESCC</td>
<td>ProdDesc</td>
<td></td>
<td></td>
<td>CHAR</td>
<td>19</td>
<td>19</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>LANGUAGE</td>
<td>Language</td>
<td></td>
<td></td>
<td>CHAR</td>
<td>1</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

16. Activate the DataSource.

17. Go to the tab page Preview and check the data before the actual load process by choosing Read Preview Data.

**Result**

You created the master data DataSources for characteristic Product. At activation, a table is created for each DataSource in the entry layer of the BI system, the persistent staging area (PSA), and the source data is stored there during the transfer.

**Continue with ...**
5 Creating DataSources for Transaction Data

Use

You create a transaction data DataSource to copy the sales data from the file to the BI system.

Prerequisites

File source system PC_FILE exists.

Procedure

1. In the Modeling area of the Data Warehousing Workbench, choose DataSources.
2. In the context menu of your application component, choose Create DataSource...
3. In the next screen, enter ZD_SALES for DataSource and select Transaction Data as the Data Type DataSource.
4. Choose Transfer.

   The DataSource maintenance screen appears.

5. On tab page General Info. enter Sales Data as Short description.
6. Go to the tab page Extraction and define the following:

<table>
<thead>
<tr>
<th>Field</th>
<th>Entry/Selection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adapter</td>
<td>Load Text-Type File from Local Workstation</td>
</tr>
<tr>
<td>File Name</td>
<td>File of your workstation, select the file Tutorial_Trans.csv.</td>
</tr>
<tr>
<td>Header Rows to be Ignored</td>
<td>2</td>
</tr>
<tr>
<td>Data Format</td>
<td>Separated with Separator (for Example, CSV)</td>
</tr>
<tr>
<td>Data Separator</td>
<td>;</td>
</tr>
<tr>
<td>Escape Sign</td>
<td>“</td>
</tr>
<tr>
<td>Number format</td>
<td>Direct Entry</td>
</tr>
<tr>
<td>Thousands Separator</td>
<td>.</td>
</tr>
<tr>
<td>Decimal Point Separator</td>
<td>,</td>
</tr>
</tbody>
</table>
7. Go to tab page Proposal and choose Load Example Data to create a proposal for the DataSource.

9. Go to the Fields tab page.

   In the dialog box, choose Yes.

   The field list of the DataSource is copied from the Proposal tab page.

10. Make the following changes and enhancements:

    a. Change the data type for the following fields from CHAR to...


<table>
<thead>
<tr>
<th>Field</th>
<th>Data type</th>
</tr>
</thead>
<tbody>
<tr>
<td>CALENDERDAY</td>
<td>DATS</td>
</tr>
<tr>
<td>QUANTITY</td>
<td>QUAN</td>
</tr>
<tr>
<td>UNIT</td>
<td>UNIT</td>
</tr>
<tr>
<td>REVENUE</td>
<td>CURR</td>
</tr>
<tr>
<td>CURRENCY</td>
<td>CUKY</td>
</tr>
</tbody>
</table>

    b. Under curr/unit, enter UNIT as the name of the referenced currency/unit field for the field QUANTITY and CURRENCY for the field REVENUE.
c. Change the **Format** for the field **REVENUE** from **internal** to **external**.

<table>
<thead>
<tr>
<th>Field</th>
<th>Format</th>
</tr>
</thead>
<tbody>
<tr>
<td>Internal</td>
<td></td>
</tr>
<tr>
<td>External</td>
<td></td>
</tr>
</tbody>
</table>

11. Activate the DataSource.

12. Go to the tab page **Preview** and check the data before the actual load process by choosing **Read Preview Data**.

**Result**

You created the DataSource for the sales data. At activation, a table is created for the DataSource in the entry layer of the BI system, the Persistent Staging Area (PSA), and the data is stored there during the transfer.

**Continue with ...**

6 Creating Transformations for Master Data of Characteristic "Product"

**Use**

You create transformations for the attributes and texts of characteristic **Product** (ZD_PROD).

The master data for the characteristics **Product Group** and **Channel** will be created later directly in the system. No transformations are therefore required in our scenario for these characteristics.

**Procedure**

1. You are in the **Modeling** functional area of the Data Warehousing Workbench.

2. Choose **InfoProvider**.

3. Choose **Create Transformation...** from the context menu at the symbol for texts under your InfoObject **Product** (ZD_PROD).

4. Select object type **DataSource** as source of the transformation and select your DataSource for texts ZD_PROD_TEXTS and source system PC_FILE.

5. Choose **Create Transformation**.

The maintenance screen for the transformation appears. The fields of the DataSource are displayed at the left and the rule group with the target InfoObjects at the right.
6. With the mouse, connect the DataSource fields with the target InfoObjects as follows:

<table>
<thead>
<tr>
<th>DataSource Field</th>
<th>InfoObject</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRODID</td>
<td>ZD_PROD</td>
</tr>
<tr>
<td>PRODDESC</td>
<td>0TXTMD</td>
</tr>
<tr>
<td>LANGUAGE</td>
<td>0LANGU</td>
</tr>
</tbody>
</table>

7. Activate your transformation.

8. Exit from the transformation maintenance screen.

9. Choose *Create Transformation...* from the context menu at the symbol for attributes  under your InfoObject *Product* (ZD_PROD).

10. Select object type *DataSource* as source of the transformation and select your DataSource for attributes ZD_PROD_ATTRIBUTES and source system PC_FILE.

11. Choose ✅ *Create Transformation*.

The maintenance screen for the transformation appears.

12. With the mouse, connect the DataSource fields with the target InfoObjects as follows:

<table>
<thead>
<tr>
<th>DataSource Field</th>
<th>InfoObject</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRODID</td>
<td>ZD_PROD</td>
</tr>
<tr>
<td>PG_ID</td>
<td>ZD_PGROUP</td>
</tr>
<tr>
<td>CURRENCY</td>
<td>0CURRENCY</td>
</tr>
<tr>
<td>PRICE</td>
<td>ZD_PRICE</td>
</tr>
</tbody>
</table>

13. Activate your transformation.

**Result**

You created the transformations for the master data for characteristic *Product* and have now completed all preparation for creating and executing the load processes for the attributes and texts of characteristic *Product*.

**Continue with ...**
7 Creating Transformations for InfoCubes

Use

You create a transformation for InfoCube Sales Overview (ZD_SALES).

The source (DataSource) and target (InfoCube) of the transformation have different time characteristics. The granular time characteristic CALENDERDAY is in the source, whereas the InfoCube contains several less granular time characteristics. By assigning CALENDERDAY to these less granular time characteristics, they are automatically filled by an automatic time conversion. You are not required to make a special entry.

Procedure

1. Go to the Data Warehousing Workbench; in the Modeling area choose InfoProvider.
2. In the context menu of your InfoCube, choose Create Transformation...
3. On the next screen, select object type DataSource as source of the transformation, and select the DataSource for transaction data ZD_SALES and source system PC_FILE.

The maintenance screen for the transformation appears. The fields of the DataSource are displayed at the left and the rule group with the target InfoObjects at the right.

5. With the mouse, connect the DataSource fields with the target InfoObjects as follows:

<table>
<thead>
<tr>
<th>DataSource Field</th>
<th>InfoObject</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRODUCT</td>
<td>ZD_PROD</td>
</tr>
<tr>
<td>SALESDOC</td>
<td>0DOC_NUMBER</td>
</tr>
<tr>
<td>CALENDARDAY</td>
<td>0CALMONTH</td>
</tr>
<tr>
<td></td>
<td>0CALMONTH2</td>
</tr>
<tr>
<td></td>
<td>0CALWEEK</td>
</tr>
<tr>
<td></td>
<td>0CALYEAR</td>
</tr>
<tr>
<td>CHANNEL</td>
<td>ZD_CHAN</td>
</tr>
<tr>
<td>QUANTITY</td>
<td>ZD_QTY</td>
</tr>
<tr>
<td>REVENUE</td>
<td>ZD_REV</td>
</tr>
</tbody>
</table>

Fields UNIT and CURRENCY are automatically assigned.
6. Activate your transformation.

**Result**

You created the transformation for the sales data and have now completed all preparations for creating and executing the load process for the sales data.

**Continue with ....**

8 **Creating Master Data Directly in the System**

**Use**

You can create the master data for characteristics *Product Group* and *Channel* directly in the BI system at a later time.

If the number of master data records for an InfoObject is very small, you can enter this master data directly in the system without loading it.

**Procedure**

1. In the *Modeling* area of the Data Warehousing Workbench, choose *InfoObjects*.
2. In the InfoObject catalog for characteristics, choose *Maintain master data* from the context menu of your InfoObject *Product Group* (ZD_PGROUP).
3. Choose ✉️ *Execute*.
4. Choose ✉️ *Create*.
5. Enter **DS10** as Product Group and **Computer** as the Short description and choose ✉️ *Continue*.
6. Repeat steps 4 and 5 with the following values:

<table>
<thead>
<tr>
<th>Product Group</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>DS20</td>
<td>Accessories</td>
</tr>
<tr>
<td>DS30</td>
<td>Hardware</td>
</tr>
</tbody>
</table>
7. Save your entries and return to the InfoObject tree.
8. Repeat steps 2-7 for the characteristic Channel (ZD_CHAN) with the following values:

<table>
<thead>
<tr>
<th>Channel</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Internet</td>
</tr>
<tr>
<td>2</td>
<td>Fax</td>
</tr>
<tr>
<td>3</td>
<td>Phone</td>
</tr>
<tr>
<td>4</td>
<td>Other</td>
</tr>
</tbody>
</table>

**Result**

You filled the characteristics:

- *Product Group* (ZD_PGROUP)
- *Channel* (ZD_CHAN)

with values.

**Continue with ...**

9 **Loading Master Data for Characteristic "Product"**

**Use**

You create InfoPackages for the characteristic *Product* and execute them in order to load the master data attributes and texts from the file in the entry layer of the BI system into the Persistent Staging Area (PSA). You create data transfer processes and execute them in order to load the data from the PSA into the master data tables of the characteristic. The defined transformations are executed at this time.

**Procedure**

1. Go to the Data Warehousing Workbench; in the *Modeling* area choose *InfoProvider*.
   
   The attributes and texts are displayed with transformation and DataSource in your InfoArea below the characteristic *Product*.

2. Perform the following steps, first for the attributes of the characteristic and then for the texts of the characteristic.
   
   a. From the context menu of the DataSource, choose *Create InfoPackage*...
   
   b. On the next screen, enter a description for the InfoPackage and choose ✓Save.
      
      The InfoPackage maintenance screen for the scheduler appears.
c. Go to the tab page Schedule and choose 📅 Start.

d. To check the load process, choose 🛠 Monitor in the toolbar of the InfoPackage maintenance screen.

e. On the next screen, select the date and choose 📅 Execute.

The monitor for the load process is displayed.

f. Select the load process for your DataSource from the tree at the left of the screen.

If you cannot find the load process directly, change the tree with 🛠 Configure Tree so that the DataSource and the data are displayed below the status. The load process (request) is displayed below the date.

You can display the status of the individual process steps during the load process on the tab page Details.

g. Exit from the InfoPackage maintenance screen.

h. From the context menu for the DataSource, choose Create Data Transfer Process... The system displays a generated description, the type, source and target of the data transfer process.

i. Choose ✅ Continue.

j. The data transfer process maintenance screen appears.

k. On the Extraction tab page, select extraction mode Full.

l. Activate the data transfer process.
m. Select the tab page Execute and choose Execute.

n. Confirm the next dialog box.

The data transfer process monitor appears.

The monitor displays the status of the load process. You can display the status of the individual process steps during the load process on the tab page Details. If the status is yellow, refresh the status display for the load process with Refresh Request.

Result

You successfully loaded the data into the master data and text table of characteristic Product. The data is now available for the analysis.

Continue with ...

10 Loading Transaction Data

Use

You create an InfoPackage and execute it in order to load the sales data from the file in the entry layer of the BI system into the Persistent Staging Area (PSA). You create a data transfer process and execute it in order to load the sales data from the PSA into the InfoCube Sales Overview. The defined transformation is executed at this time.
Procedure

1. Go to the Data Warehousing Workbench; in the Modeling area choose InfoProvider. The transformation and the DataSource are displayed in the InfoArea below the InfoCube Sales Overview.

2. In the context menu of the DataSource, choose Create InfoPackage...

3. On the next screen, enter a description for the InfoPackage and choose Save. The InfoPackage maintenance screen for the scheduler appears.

4. Go to the tab page Schedule and choose Start.

5. To check the load process, choose Monitor in the toolbar of InfoPackage maintenance.

6. On the next screen, select the date and choose Execute. The monitor for the load process is displayed.

7. Select the load process for your DataSource from the tree at the left of the screen.

   If you cannot find the load process, change the tree with Configure Tree so that the DataSource and the data are displayed below the status. The load process (request) is displayed below the date.

   You can display the status of the individual process steps during the load process on tab page Details.

8. Exit the InfoPackage maintenance screen.

9. From the context menu of the DataSource, choose Create Data Transfer Process....
The system displays a generated description, the type, source and target of the data transfer process.

10. Choose \textit{Continue}.

11. The data transfer process maintenance screen appears.

12. Go to tab page \textit{Extraction} and select extraction mode \textit{Full}.

13. Activate the data transfer process.

14. Go to tab page \textit{Execute} and choose \textit{Execute}.

15. Confirm the next dialog box.

The data transfer process monitor appears.

The monitor displays the status of the load process. You can display the status of the individual process steps during the load process on tab page \textit{Details}. If the status is yellow, refresh the status display for the load process with \textit{Refresh Request}.

\textbf{Result}

You successfully loaded the sales data into InfoCube \textit{Sales Overview}. The data is now available for the analysis.

\textbf{Continue with ...}
11 Defining Queries

Use
You define a query that is used as the data provider for the BEx Web application.

Procedure

Starting the Query Designer and Selecting the InfoProvider

1. Start the BEx Query Designer by choosing Start → Programs → Business Explorer → Query Designer.
2. Log on to the BI system.
3. In the toolbar, choose New Query...
4. Choose Find.
5. Enter ZD_SALES as the search string in the upper empty field, select Search in Technical Name and deselect Search in Description.
6. Choose Find.
   InfoCube ZD_SALES is displayed in the lower empty field.
7. Select the InfoCube ZD_SALES and choose Open.
   The data of InfoCube Sales Overview (ZD_SALES) is displayed in the left part of the InfoProvider screen of the Query Designer.

Defining Characteristic Restrictions in the Filter

1. Expand the dimension Time and drag the characteristic Calendar Year/Month to the Characteristic Restrictions with drag and drop.
2. Select Calendar Year/Month and, in the context menu, select Restrict....
   The input help dialog for selecting characteristic values with which the query is filtered at runtime appears.
3. Under Show choose Value Ranges.
4. Enter Between as operator and select July 2007 to September 2007 as the interval. To do this:
   a. Call the input help for the lower value of the interval using the input help Select from List.
   b. Choose Show → Single Values.
   c. Select July 2007 and choose OK.
      The lower value July 2007 appears in the first field.
   d. Repeat steps a to c for the upper value and select September 1007.
5. To add this restriction to the selection, choose the arrow to the right Move to Selection.

6. Choose OK.

7. Drag the characteristic Calendar Year/Month to the right area Default Values and in the context menu select Restrict...

8. Select September 2007 (which automatically appears in the History) and add the value using the arrow to the right.

9. Choose OK.

The restrictions in the filter have an effect on the entire query. In this case the InfoProvider data is aggregated for the calendar months July 2007 – September 2007. The proposed value is used as an initial value in the initial view (when executing the query or Web application) and can be changed if required. For example, users can display the sales data for July or August instead of September.

Selecting Characteristics and Key Figures for Navigation

1. Choose the screen area Rows/Columns.

It is displayed as a tab following the tab Filter at the bottom of the screen area.

2. In the screen area InfoProvider, expand the dimension Sales Organization and drag the characteristic Channel to Rows with drag and drop.

3. In the screen area InfoProvider, expand the dimension Product and drag the characteristic Product Group to Rows (under Channel) with drag and drop.

4. Drag the key figures Quantity and Revenue from the screen area InfoProvider to the Columns with drag and drop.

The key figures are automatically arranged in a structure with the default name Key Figures since key figures are always displayed in a structure for technical
reasons. You can change the name of the structure if required by selecting Key Figures and changing the description of the structure in the right screen area Properties.

5. Drag the characteristic Product from the screen area InfoProviders to the area Free Characteristics with drag and drop. (It already automatically contains the characteristic Calendar Year/Month, which you added to the filter.)

The arrangement of the characteristics and key figures in the rows and columns defines the initial view on the data table. You can change it by navigating. The free characteristics can be used for navigation. For example, users can add one of the free characteristics to the table.

**Saving Queries**

1. From the toolbar, choose  Save Query.
2. Enter **Sales Summer 2007** as the description and **ZD_SALES_2007** as the technical name.
3. Choose Save.

**Displaying the Query on the Web (Optional)**

To check the data and structure of the query, you can execute the query ad hoc in the Web.

1. From the toolbar, choose  Execute...
2. Log onto the portal.

The query is displayed in the BEx Web Analyzer. This enables you to perform an ad hoc analysis of the data.

Result
You created the query and can now create the BEx Web application.

Continue with ....

12 Creating Web Applications

Use
You create a Web application in which you can analyze sales data for the year 2007 on the Web. The data for the analysis is available in query ZD_SALES_2007. The query data is displayed in a table in the Web application. To create a Web application, you integrate the Web item Analysis in the Web template. By simply pressing a button, you can create a PDF document in the Web application and send the analysis by e-mail; you use the Web item Button Group in the Web template to do this. To filter the data by month, you can use a dropdown box that can be inserted into the Web template as a Web item.

Procedure

Calling the Web Application Designer and Creating the Data Provider

1. Start the BEx Web application by choosing Start → Programs → Business Explorer → Web Application Designer.

2. Log onto the BI system.

3. In the initial screen of the Web Application Designer, click on the link Create New Blank Web Template.

4. In the lower part of the layout view choose New Data Provider.

5. In the dialog box for the data provider type select Query and enter the name of the query ZD_SALES_2007 in the field following Query.
6. Choose OK.

7. The data provider is displayed in the lower part of the layout view in the Web Application Designer.

**Designing the Layout of the Web Application (Inserting HTML Table and Free Text)**

1. Enter a meaningful text such as `<SALES 2007>` in the Web template area, and format it as required using the formatting functions (for example, font, font size, font color) in the toolbar.

2. Insert a new line at the end of the text.

3. In the toolbar, choose 

4. On the Custom tab in the next dialog box, define the table so that it has one row and two columns and choose OK.

Inserting an HTML table simplifies the arrangement of the Web items in the Web template and thus permits you to design your layout.

**Inserting Web Items**

1. Insert the Web items Button Group and Dropdown Box in the table.
   a. In the Web Items screen area, select the Web item group Standard.
b. Drag the *Button Group* Web item to the left column of the table with drag and drop.

c. Drag the *Dropdown Box* Web item to the right column of the table with drag and drop.

d. Bring the two columns closer together if required.

2. Drag the *Analysis* Web item to the area below the HTML table with drag and drop.

**Defining Web Item Parameters**

To define the Web item parameters, click on the relevant Web item and go to the tab page *Web Item Parameters* in the screen area *Properties*.

**Button Group Web item**

1. Click on the first pushbutton in the parameter group *Internal Display*. The *Edit Parameter* dialog box appears.

   a. Enter the text **PDF** for the caption.

   b. Click on the pushbutton to the right of the parameter *Command* below *Action*. The Command Wizard appears.

   c. Choose *All Commands* → *Commands for Web Templates*. 
d. Select the command *Export Web Application* and choose *Continue* with the mouse button.

If you precede the command with this indicator, the command is copied to the list of favorite commands.

e. From the command-specific parameters, select *PDF* as export format and choose *OK*.

f. Choose *OK* in the dialog box *Edit Parameter*.

You created the first pushbutton, which permits conversion to a PDF document in the Web application by pressing a button. Now create the second pushbutton.

2. Click on the second pushbutton in the parameter group *Internal Display*. The *Edit Parameter* dialog box appears.

a. Enter the text **Send** for the caption.

b. Select the pushbutton to the right of the parameter *Command* below *Action*. The Command Wizard appears.

c. Choose *All Commands → Commands for Web Templates*.

d. Select the command *Start Broadcaster* and choose *Continue*.

e. Select the command-specific parameter *START_WIZARD*.

f. Select *E-MAIL* as Distribution Type (DISTRIBUTION_TYPE) and choose *OK*.
g. Choose OK in the dialog box Edit Parameter.

You created the second pushbutton, with which you can send the analysis in the Web application.

**Dropdown Box**

1. Select data connection type Char./Structure Member (CHARACTERISTIC_SELECTION) in Web item parameter group Data Binding.
2. Click on the pushbutton next to parameter Selection of Characteristic. The Edit Parameter dialog box appears.
3. Enter DP_1 as data provider.
4. Under Characteristic select CalYear/Month (0CALMONTH) and choose OK.
5. Select Label Visible.
6. Choose OK in the dialog box Processing Parameters.

**Analysis**

1. Select DP_1 as data provider in the Web item parameter group Data Binding.
2. Activate the parameter Document Symbols for Data (DOCUMENT_ICONS_DATA) in the Web item parameter group.

You can copy the other predefined parameters for the Web item Analysis.

**Saving and Executing the Web Template**

1. In the menu bar choose Web Template → Save as.
2. Enter a meaningful name and a technical name for your Web template under Description and choose OK.
3. Choose (Execute…).
The Web template is displayed in the Web browser, where you can begin your analysis.

### SALES 2007

![Calendar Year/Month: 09.2007](image)

<table>
<thead>
<tr>
<th>Channel</th>
<th>Product Group</th>
<th>Quantity</th>
<th>Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fax</td>
<td>Computer</td>
<td>15</td>
<td>$8,764.65</td>
</tr>
<tr>
<td></td>
<td>Result</td>
<td>15</td>
<td>$9,764.65</td>
</tr>
<tr>
<td>Internet</td>
<td>Accessories</td>
<td>3,605</td>
<td>$363,028.00</td>
</tr>
<tr>
<td></td>
<td>Computer</td>
<td>295</td>
<td>$176,692.05</td>
</tr>
<tr>
<td></td>
<td>Hardware</td>
<td>1,200</td>
<td>$27,586.00</td>
</tr>
<tr>
<td></td>
<td>Result</td>
<td>5,300</td>
<td>$567,308.05</td>
</tr>
<tr>
<td>Phone</td>
<td>Accessories</td>
<td>1,275</td>
<td>$19,008.75</td>
</tr>
<tr>
<td></td>
<td>Computer</td>
<td>220</td>
<td>$138,217.80</td>
</tr>
<tr>
<td></td>
<td>Result</td>
<td>1,495</td>
<td>$157,226.55</td>
</tr>
<tr>
<td></td>
<td>Overall Result</td>
<td>6,810</td>
<td>$734,295.45</td>
</tr>
</tbody>
</table>

#### Result

You created a Web template for analyzing your sales data and launched it in the Web browser as a Web application.

#### Continue with ...

### 13 Analyzing Data in the Web Application

#### Use

You navigate in the Web application to analyze data and, if necessary, to add comments.

#### Procedure

1. Since you are interested in the revenue, you want to sort the revenue data. Click on the arrows in the *Revenue* field to sort the revenue data in increasing or decreasing order.

   You can also sort the revenue by clicking the alternative mouse button on *Revenue* and choosing *Sort → Sort Increasing* or *Sort Decreasing* in the context menu.

   You see that the greatest revenue is obtained with the distribution channel *Internet*.

2. To see the differences in the revenue data for the months July, August and September, select first *08.2007* and then *07.2007* in the dropdown box *Calendar Year/Month*.

   You see that the revenue data for the distribution channel *Internet* increased greatly. The marketing campaign for the Internet shop was apparently successful.
3. Filter the data back to September by selecting 09.2007 in the dropdown box.

4. To add a comment to the Web application about the successful increase in revenue using the Internet, create an appropriate document. At the subtotal of the distribution channel Internet (567.308,05) choose Documents → Create New Comment in the context menu.

5. Enter a name and description for the document.

6. Enter a text and choose Save.
7. Choose OK.

The revenue data for the distribution channel *Internet* now contains a symbol that indicates that it has a document.

**SALES 2007**

<table>
<thead>
<tr>
<th>Channel</th>
<th>Product Group</th>
<th>Quantity</th>
<th>Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fax</td>
<td>Computer</td>
<td>15</td>
<td>9.764,25</td>
</tr>
<tr>
<td></td>
<td>Result</td>
<td>15</td>
<td>9.764,25</td>
</tr>
<tr>
<td>Phone</td>
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<td>1.275</td>
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<td>220</td>
<td>139.217,80</td>
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<td>Result</td>
<td>1.495</td>
<td>157.226,65</td>
</tr>
<tr>
<td>Internet</td>
<td>Hardware</td>
<td>1.200</td>
<td>27.588,00</td>
</tr>
<tr>
<td></td>
<td>Computer</td>
<td>295</td>
<td>176.692,05</td>
</tr>
<tr>
<td></td>
<td>Accessories</td>
<td>3.805</td>
<td>363.026,00</td>
</tr>
<tr>
<td></td>
<td>Result</td>
<td>5.300</td>
<td>667.308,05</td>
</tr>
<tr>
<td>Overall Result</td>
<td>6.810</td>
<td>734.299,45</td>
<td></td>
</tr>
</tbody>
</table>

The text is displayed when you click on the document symbol.

8. To store this view on the data, you want to create a PDF document that you can print when needed. Click on the PDF pushbutton.

9. Adjust the output of the PDF document to your requirements. For example, choose *Header* → *Links* → *Free Text* and enter *September Revenue* in the empty field.

10. Choose OK.

The PDF document is displayed.

**September Revenue**

<table>
<thead>
<tr>
<th>Channel</th>
<th>Product Group</th>
<th>Quantity</th>
<th>Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fax</td>
<td>Computer</td>
<td>15</td>
<td>9.764,85</td>
</tr>
<tr>
<td></td>
<td>Result</td>
<td>15</td>
<td>9.764,85</td>
</tr>
<tr>
<td>Phone</td>
<td>Accessories</td>
<td>1.275</td>
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<td></td>
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<td>220</td>
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<td>6.810</td>
<td>734.299,45</td>
<td></td>
</tr>
</tbody>
</table>

You can print the PDF document or save it locally.
Result
You analyzed the data in the Web application and added a comment to this data.

The navigation steps described above demonstrate the simple analysis options available in a
Web application. The more complex options for data analysis in the Web are described in
detail in the documentation about the Business Explorer.

You can make the Web application available to your colleagues, for example by sending it by
e-mail after the data analysis.

Continue with ....

14 Broadcasting Web Applications by E-Mail

Use
You can provide the BEx Web application to other employees in your company, for example,
to colleagues in the sales department, by broadcasting it by e-mail.

Prerequisites
You have authorization for authorization object S_OC_SEND.

Make sure that the e-mail addresses of the recipients are entered in user maintenance
(transaction code SU01) and that communication type E-Mail is specified.

Procedure
1. In the Web application, click on Send.
   The Broadcasting Wizard appears; it guides you step-by-step through the required
   settings.
2. Select output format *MHTML*.

The system creates an MHTML file. All components (HTML, style sheet, pictures, and so on) of the entire HTML page are in one file. This output format is suitable if you want to generate one single document and broadcast it by e-mail or to the portal.

3. Choose *Continue*.

4. Enter the e-mail addresses of the recipients, separated with semicolons.

5. Enter a subject line and text, and define the importance of the e-mail.
6. Choose *Execute*.

Choose *Continue* for further steps in the Broadcasting Wizard with which you can save and schedule your broadcast settings. You do not need these additional steps if you want to execute the broadcast settings directly.

**Result**

You distributed the Web application by e-mail to the specified recipients, who receive an MHTML file containing the Web application. The data has the version at the time when the e-mail was sent. The data in this document cannot be subjected to a further analysis.

The Broadcasting Wizard allows various types of distribution, such as distribution to the portal, scheduling of the time of distribution, and creating different output formats. For example, distributing online links gives the recipients access to current data and an additional data analysis.