SAP BW Data Source Enhancement

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1. Introduction

As we can read from http://help.sap.com SAP Business Information Warehouse provided pre-configured objects under collective term "Business Content" (BC). Business Content includes DataSources, InfoObjects, data targets, and InfoSources that support the entire flow of data within BW. It provides a rapid starting point when modeling key business information requirements, and it is also intended to cover most of the traditional reporting requirements that companies face. However, Business Content will not solve all your data information needs.

Now the spontaneous question is: what's happen if a standard Business Content DataSource as provided in standard (ready-to-use) configuration doesn't completely meet our data model requirements?

In other words, we go in *RSA5* transaction screen (*Installation of DataSource from Business Content*), by surfing through application component hierarchy, we find our candidate DataSource *0FI_GL_4*; afterwards, a double-click on it and we inspect the field list - I don't see a specific needed field (e.g., BKTXT, the document header text) ! What I have to do?

2. Activities to perform in the R/3 Source System

2.1. Edit Standard DataSource

The first step is to enhance the DataSource for General Ledger: Line Items with Delta Extraction (0FI_GL_4) by adding the field Document Header Text (BKTXT). Go to transaction code: RSA6 in the SAP R/3 source system. By surfing through application hierarchy, we find our candidate datasource 0FI_GL_4 as shown in Fig:1;
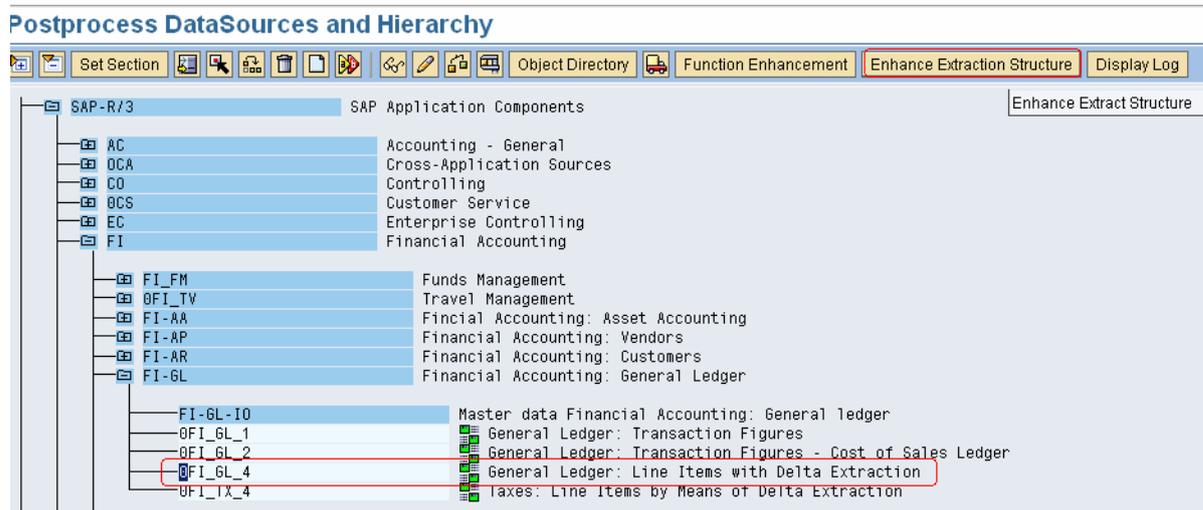

Fig:1 Selection of DataSource

Afterwards, select on it and display the datasource as shown in Fig:2.

DataSource: Customer version Display

Header Data

DataSource	0FI_GL_4	Package	
Description	General Ledger: Line Items with Delta Extraction		

Extraction

ExtractStruct.	DTFIGL_4
Direct Access	D
Delta Update	☑

DataSource for Reconciliation ☐

Field Name	Short text	Selection	Hide field	Inversion	Field only...	
ANLN1	Main Asset Number	☐	☐	☐	☐	

Fig:2 Display DataSource: 0FI_GL_4

Double click on Extract Structure: DTFIGL_4 and click on Append Structure button as shown in Fig:3

Dictionary: Display Structure

Hierarchy Display | Append Structure...

		Append Structure... (F5)
Structure	DTFIGL_4	Active
Short Text	Extract Structure: General Ledger Line Items to BW	

Attributes | Components | Entry help/check | Currency/quantity fields

Predefined Type   1 / 92

Component	RT...	Component type	Data Type	Length	Deci...	Short Text
BUKRS	☐	BUKRS	CHAR	4	0	Company Code
FISCPER	☐	RSFISCPER	NUMC	7	0	Fiscal year / period
BELNR	☐	BELNR_BIW	CHAR	10	0	Accounting Document Number

Fig:3 Display Extract Structure: DTFIGL_4 and click on Append Structure button.

Add the field Document Header Text (ZZBKTXT) in the Append Structure with Component Type: BKTXT as shown in the Fig:4. Before you exit, make sure that you activate the structure by clicking on the activate button.

Dictionary: Display Append Structure

Hierarchy Display | Append Structure...

Append Structure	ZADTFIGL_4	Active
Short Text	Enhancement for CR-683	

Attributes | Components | Entry help/check | Currency/quantity fields

Predefined Type | Show Appending Obj   1 / 1

Component	RT...	Component type	Data Type	Length	Deci...	Short Text
ZZBKTXT	☐	BKTXT	CHAR	25	0	Document Header Text

Fig:4 Adding the field ZZBKTXT to Append Structure: ZADTFIGL_4

You need to confirm that the Document Header Text(ZZBKTXT) has been added to the DataSource and that it will be available to BW. When you arrive back at the Postprocess Datasource and Hierarchy screen, select the same DataSource again and press the Change DataSource button .
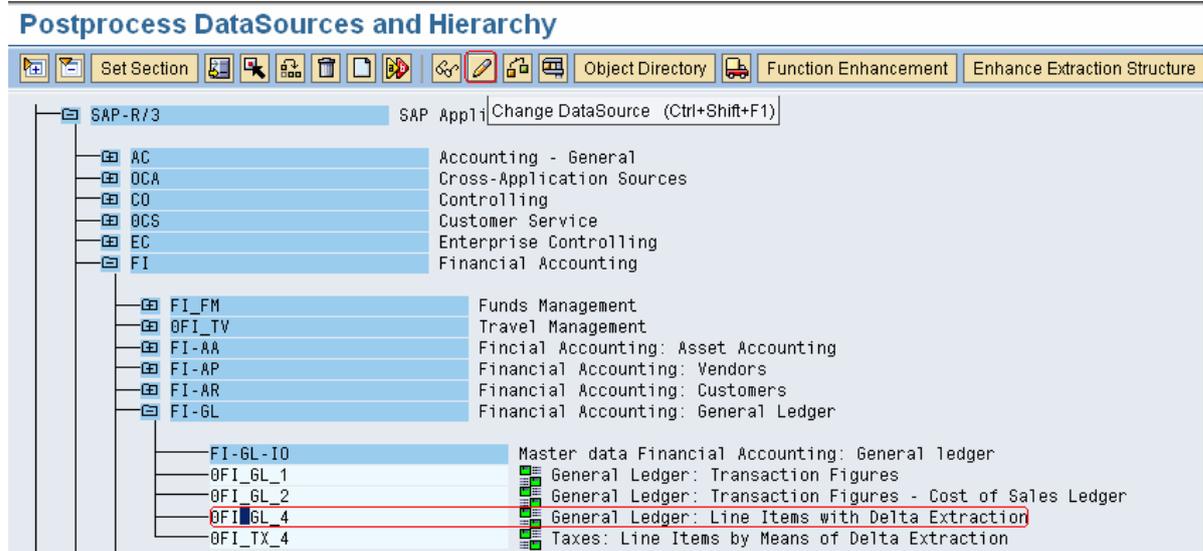

Fig:5 Click on Enhance Extraction Structure button

Scroll down to the bottom and you'll see the field has been successfully added to the extract structure. However, the Hide field will most likely be selected. To make this field available to the BW transfer structure, this field needs to be unchecked. Deselect the indicator and press the Save button. Before you exit the screen, be sure to notice the extract structure that the DataSource uses (Figure 6). This structure (DTFIGL_4) will be needed in the next step.

Fig: 6 Deselected Hide Field of ZZBKTXT

At this point, the DataSource has been successfully enhanced. To be more specific, the extract structure that the DataSource uses to pass data to BW has been physically extended with the Document Header Text field found in the *Accounting Document Header table*:

BKPF. However, the data for the Document Header Text will not immediately be available to BW until you use an SAP enhancement to properly fill the DataSource with the values from this table, which is the next step.

2.2. *Populate the Extract Structure with Data*

SAP provides enhancement RSAP0001 that you use to populate the extract structure. This enhancement has four components that are specific to each of the four types of R/3 DataSources:

- Transaction data   EXIT_SAPLRSAP_001
- Master data attributes   EXIT_SAPLRSAP_002
- Master data texts   EXIT_SAPLRSAP_003
- Master data hierarchies   EXIT_SAPLRSAP_004

With these four components (they're actually four different function modules), any R/3 DataSource can be enhanced. In this case, you are enhancing a transaction data DataSource, so you only need one of the four function modules. Since this step requires ABAP development, it is best handled by someone on your technical team. You might need to provide your ABAP colleague with this information:

- The name of the DataSource (0FI_GL_4)
- The name of the extract structure (DTFIGL_4)
- The name of the field that was added to the structure (ZZBKTXT)
- The name of the BW InfoSource (0FI_GL_4)
- The name of the R/3 table and field that contains the data you need (BKPF-BKTXT)

With this information, an experienced ABAP developer should be able to properly code the enhancement so that the extract structure is populated correctly. The ABAP code itself would look similar to that shown in Figure 7.

```
DATA: l_s_dtfigl_4 LIKE dtfigl_4,

 CASE i_datasource.

  WHEN '0FI_GL_4'.
    LOOP AT c_t_data INTO l_s_dtfigl_4.
      l_tabix = sy-tabix.
      SELECT SINGLE bktxt FROM bkpf  INTO l_s_dtfigl_4-zzbktxt
      WHERE bukrs = l_s_dtfigl_4-bukrs
      AND   belnr = l_s_dtfigl_4-belnr
      AND   gjahr = l_s_dtfigl_4-fiscper+0(4).
      MODIFY c_t_data FROM l_s_dtfigl_4 INDEX l_tabix.
    ENDLOOP   .
   WHEN OTHERS.
     EXIT.

 ENDCASE.
```

Fig:7 ABAP Code to populate extract structure in R/3 of transaction code: CMOD

2.3. *Check the DataSource in Extract Checker – RSA3*

The enhanced field can be validated /checked in the transaction code: *RSA3* by giving the datasource: 0FI_GL_4 and click on extraction button at R/3 system.

3. Activities to perform in SAP BW system

3.1. Replicate DataSource in BW System

To replicate datasource, log into your BW system and go to the Source Systems listing in the Administrator Workbench. Right-click on the appropriate source system and choose Replicate DataSources from the context menu as shown in Fig:8.
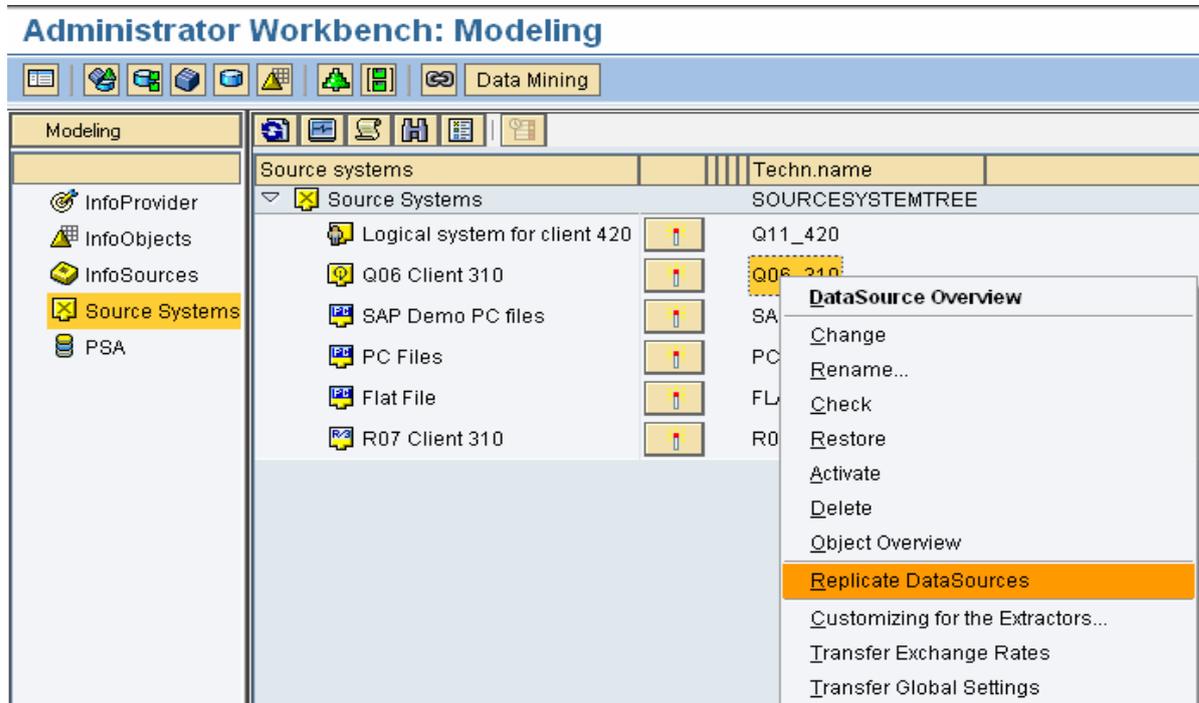
Fig:8 Replicate DataSource Screen in BW system of RSA1 transaction

3.2. Create and assign InfoObject

We need to create a new InfoObject for the Document Header Text. To do so, go to transaction code RSD1, enter a name for the new InfoObject, and click on the Create button. You will then see a dialog window where you must enter a description for the new characteristic.
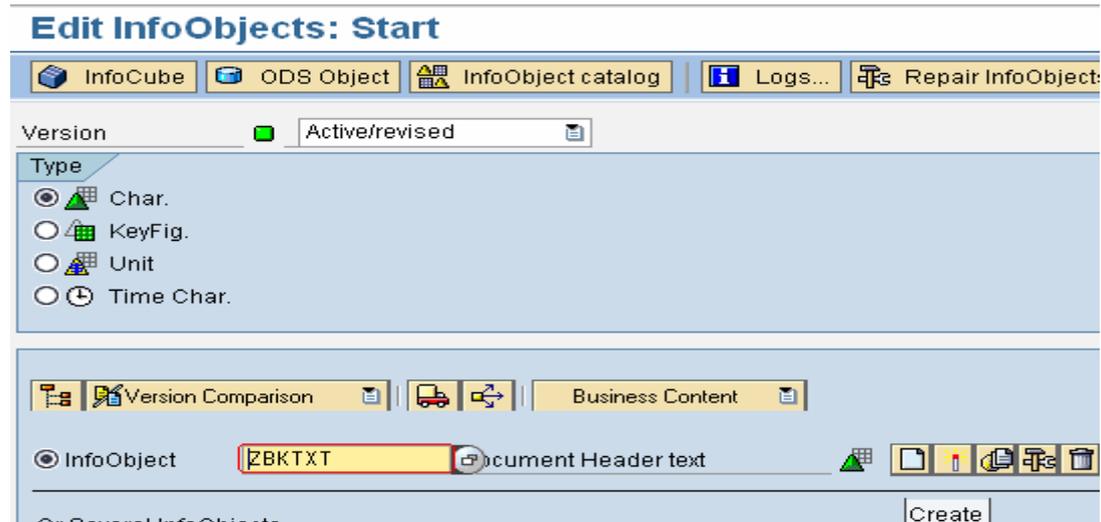
Fig:9 Create InfoObject:ZBKTXT

On the General tab, specify the data type and length of the characteristic as CHAR and 25, respectively, as shown in Figure 10. At the Master data/texts tab, specify that the

InfoObject will manage texts by clicking on With texts and Medium length texts exist. Finish creating this characteristic by clicking on the activate button and exiting the screen.
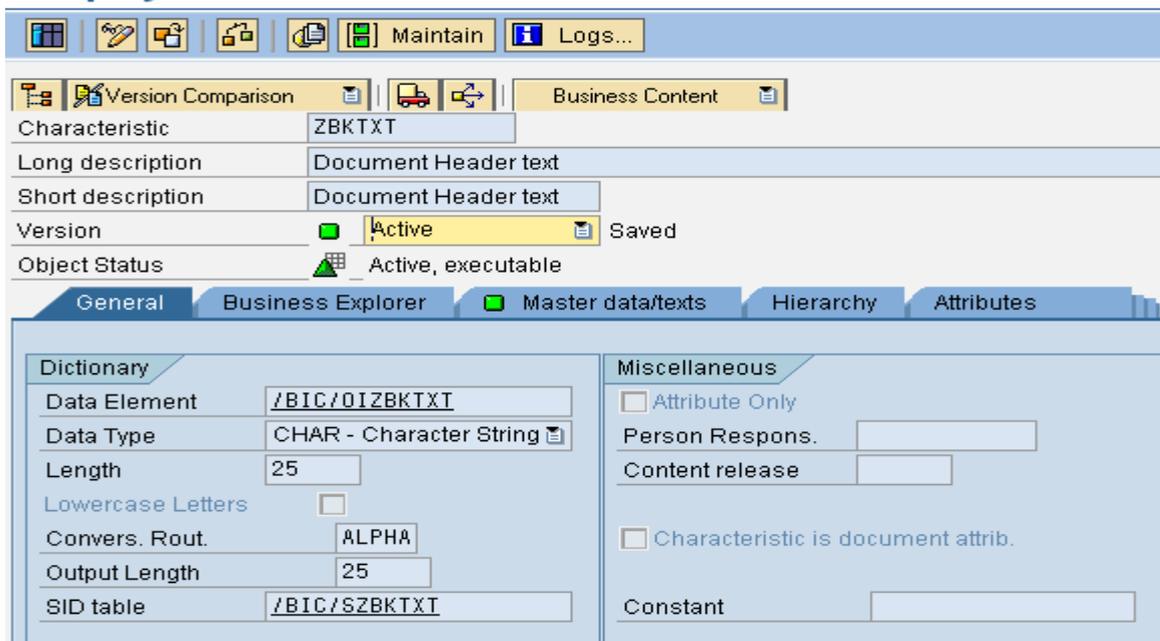
Fig:10 Characteristic InfoObject: ZBKTXT screen

3.3. Update the Transfer Rules

The next step is to maintain the transfer rules in order to properly map the fields from the DataSource to the communication structure of the InfoSource. In this example, you will be mapping them on a 1-to-1 basis from the DataSource field ZZBKTXT to the ZBKTXT InfoObject in the 0FI_GL_4 InfoSource. Go to the listing of InfoSources and find the InfoSource for 0FI_GL_4. Right-click on the source system ID and choose the Change Transfer Rules... option (Figure 11).
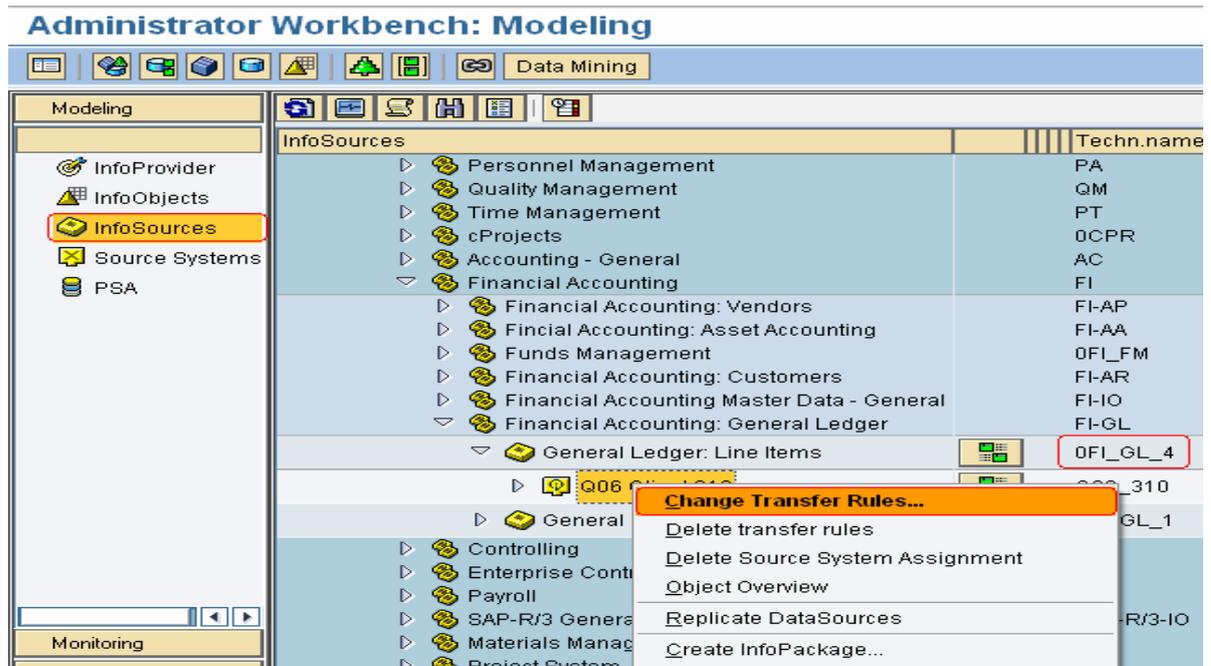
Fig:11 InfoSource: 0FI_GL_4 in RSA1 transaction screen

When you first enter the next screen, Figure 12, you'll notice that the transfer rules are shown with a yellow light. Initially InfoObject in the Communication str./Transfer rules group (displayed in the lower-left corner) that doesn't have a mapping to a InfoObject from the Assign.InfObjct-field group (displayed in the lower right corner) is ZBKTXT.
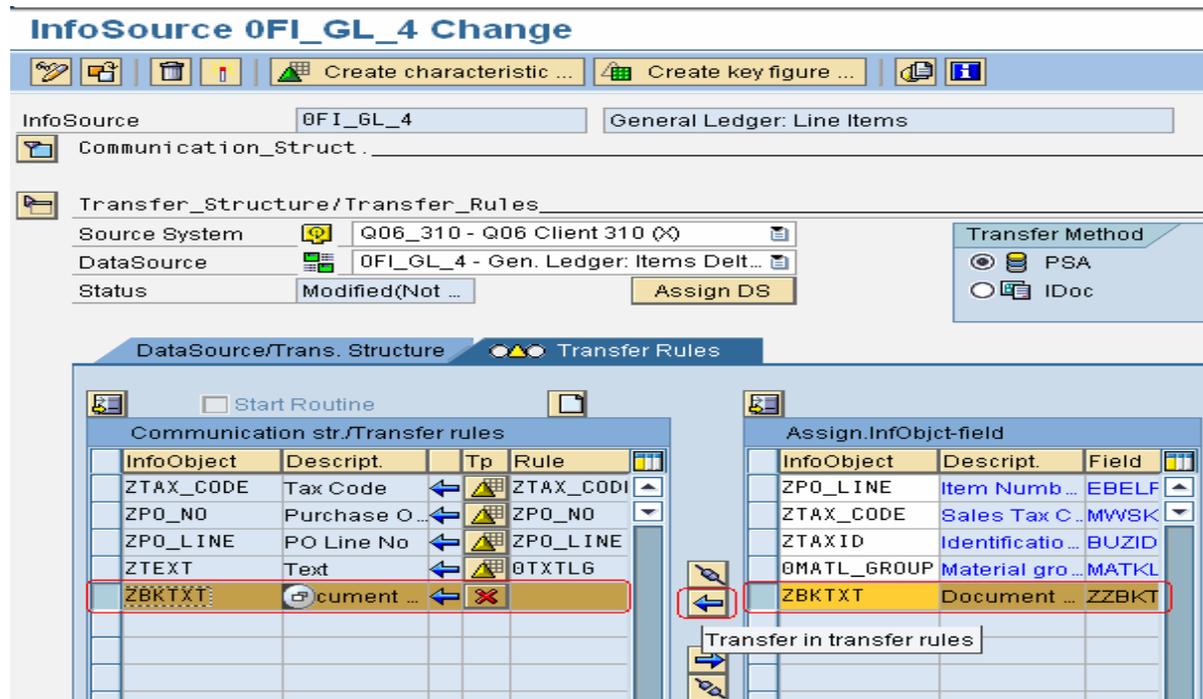
Fig:12 Transfer rules before mapping of InfoObject: ZBKTXT

In the Assign.InfObjct-field window in the lower right of the screen, scroll to the bottom until you find the field ZZBKTXT. In the Communication str./Transfer rules group, select the InfoObject ZBKTXT as shown in Figure 12 and press the Transfer in transfer rules button. This maps the R/3 field ZZBKTXT to the characteristic **ZBKTXT**. At this point, you should see the Transfer Rules definition change to a green light. Activate the transfer rules by pressing the activate button and then exiting.

Fig:13 Transfer rules after mapping of InfoObject: ZBKTXT

3.4. Load the Source Data.

Final step is to load the source data from R/3 system to BW system via InfoPackage. Figure bellow shows that the Data Target content for the Info Source: 0FI_GL_4. We can see the Document Header Text loaded successfully.

Data tgt. browser: "ZFIGL_O1", List output

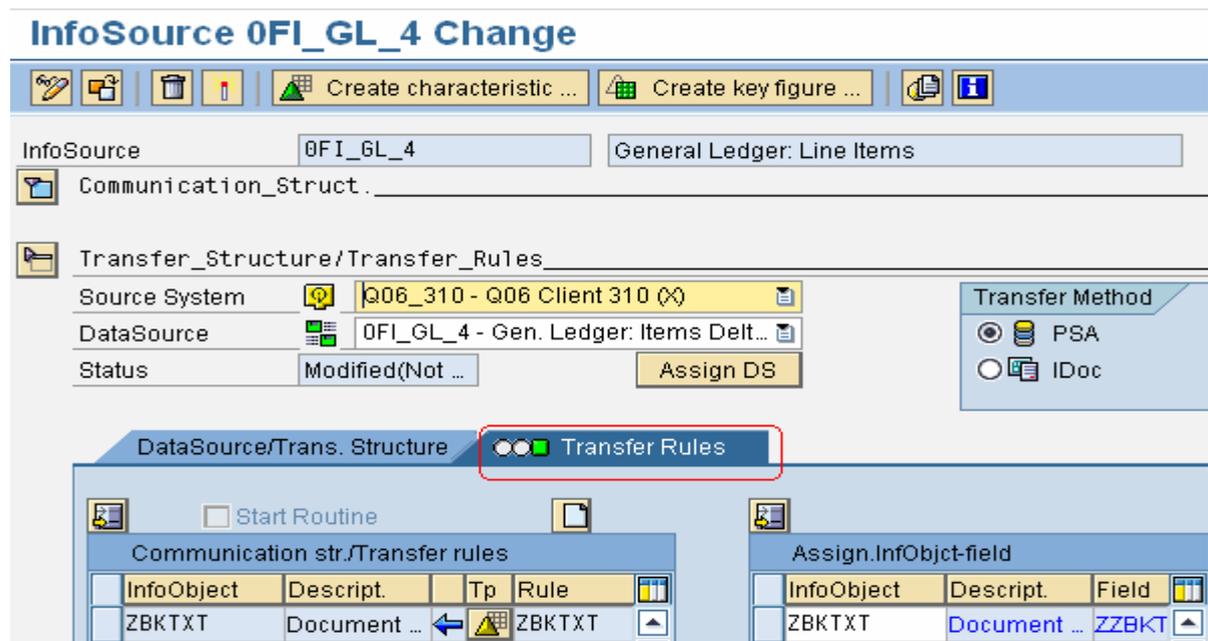| ...	Cost Center	0CO_AREA	Created on	Local currency	Posting date	0UNIT	Document Header text	Doc.number	0CHRT_ACCT	0COMP_CODE
	0066199922	1000	06.12.2005	SEK	30.11.2005		P&L adjustment	3000001033	OKU	6610
	0066199922	1000	06.12.2005	SEK	30.11.2005		P&L adjustment	3000001033	OKU	6610
	0066199922	1000	06.12.2005	SEK	30.11.2005		P&L adjustment	3000001033	OKU	6610
	0066199922	1000	06.12.2005	SEK	30.11.2005		P&L adjustment	3000001033	OKU	6610
	0066199922	1000	06.12.2005	SEK	30.11.2005		P&L adjustment	3000001033	OKU	6610
	0066199922	1000	06.12.2005	SEK	30.11.2005		P&L adjustment	3000001033	OKU	6610
	0066199922	1000	06.12.2005	SEK	30.11.2005		P&L adjustment	3000001033	OKU	6610
	0066199922	1000	06.12.2005	SEK	30.11.2005		P&L adjustment	3000001033	OKU	6610
	0066199922	1000	06.12.2005	SEK	30.11.2005		P&L adjustment	3000001033	OKU	6610
	0066199922	1000	06.12.2005	SEK	30.11.2005		P&L adjustment	3000001033	OKU	6610
	0066199922	1000	06.12.2005	SEK	30.11.2005		P&L adjustment	3000001033	OKU	6610
	0066199922	1000	06.12.2005	SEK	30.11.2005		P&L adjustment	3000001033	OKU	6610
	0066199922	1000	06.12.2005	SEK	30.11.2005		P&L adjustment	3000001033	OKU	6610
	0066153000	1000	06.12.2005	SEK	30.11.2005		P&L adjustment	3000001033	OKU	6610
	0066199922	1000	06.12.2005	SEK	30.11.2005		P&L adjustment	3000001033	OKU	6610
	0066192100	1000	06.12.2005	SEK	30.11.2005		P&L adjustment	3000001033	OKU	6610
	0066199922	1000	06.12.2005	SEK	30.11.2005		P&L adjustment	3000001033	OKU	6610
	0066192100	1000	06.12.2005	SEK	30.11.2005		P&L adjustment	3000001033	OKU	6610
	0066199922	1000	06.12.2005	SEK	30.11.2005		P&L adjustment	3000001033	OKU	6610
	0066192100	1000	06.12.2005	SEK	30.11.2005		P&L adjustment	3000001033	OKU	6610

Fig:14 *Enhanced field: ZZBKTXT at Infoprovider with loaded data from source system*

4. Conclusion

If you don't find your field already available in the SAP provided Business Content DataSources, enhance your extract structures by creating an append with your ZZ* fields and filling these fields using a specific user exit. To do this do the following steps:

1. Go to RSA6. --- All DS which are already active
2. Select the Data Source, which you want to enhance.
3. Select display Data Source (Ctr+F2)
4. Double click on the Extract structure.
5. Click on the Append Structure.
6. Add the required fields starting with ZZ*.
7. Activate the Append Structure.

Then you have to fill those fields with some ABAP custom code that can be anything from some simple calculations or table lookups to complex business logic requiring access to multiple database tables. You can do that by CMOD, creating a project and using the enhancement:*RSAP0001.*